The FIELD ARTILLERY JOURNAL

SEPT.-OCT. 1947

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1 October 1947

MEMO TO MEMBERS:

Having been assigned to other duty prior to the publication of this issue, I am grateful for this opportunity to wish health and success and good cheer to each and every member of our Association. And I want, additionally and particularly, to express the staff's warm appreciation for the membership's prompt and vigorous reaction and support during our recent Buy A Book Month campaign. It was splendid.

It is a privilege and a great pleasure for me to introduce the new Editor, Colonel Breckinridge A. Day, FA, to the membership. Commissioned in the Field Artillery in 1917, he is widely known and highly respected among American artillerymen. In addition to extensive command and staff experience with field artillery units, Colonel Day has had such distinctive assignments as Gunnery instructor and Director of Publications at the Field Artillery School, member of the Field Artillery Board, Military Attache to the Union of South Africa, duty with the Research and Developments Section, Hq. AGF—to mention but a few. Such an experience background portends, unquestionably, most capable and foresighted leadership for our Association. His editorial policies will unfold—as did mine, and all our predecessors'—as subsequent issues flow from the presses.

Edwin Armstrong

Colonel, Field Artillery

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The Secretary *of* Defense

The passage by the Congress and the approval by the President of the "National Security Act of 1947" stands as a major landmark in the history of the Armed Forces of the United States.

Unification of our three co-equal Services—the Army, the Navy, and the Air Force—is now a *legal* fact. We have a "blueprint and a charter," to borrow the words of the first Secretary of Defense, James V. Forrestal, pictured above.

As is often the case, however, there is a great difference in this instance between a *legal* fact and an *actual* fact, between a *blueprint* for unification and unification *in fact*. Mr. Forrestal and his supporting agencies and individuals, both civil and military, face tremendous problems, the character and ramifications of which cannot even be imagined by those lacking wide experience in the stubbornly difficult public administrative process. Solutions to these problems will, and only should, evolve slowly over a considerable period of time.

This JOURNAL hails Mr. Forrestal's appointment, wishes him every success, and again pledges itself never, by word or implication, to place the Field Artillery's limited interest ahead of the Nation's interest.

PUBLISHED BIMONTHLY BY THE UNITED STATES FIELD ARTILLERY ASSOCIATION WHICH WAS FOUNDED IN 1910 WITH THE FOLLOWING OBJECTS—AS WORTHY NOW AS THEN

The objects of the Association shall be the promotion of the efficiency of the Field Artillery by maintaining its best traditions; the publishing of a Journal for disseminating professional knowledge and furnishing information as to the field artillery's progress, development and best use in campaign; to cultivate, with the other arms, a common understanding of the powers and limitations of each; to foster a feeling of interdependence among the different arms and of hearty cooperation by all; and to promote understanding between the regular and militia forces by a closer bond; all of which objects are worthy and contribute to the good of our country.

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COLONEL BRECKINRIDGE A. DAY
Editor

(This issue was edited by the retiring Editor, Colonel Devere Armstrong.)

LENNA PEDIGO
Business Manager

The FIELD ARTILLERY JOURNAL

"Contributes to the Good of Our Country"

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- Cover: Airborne artillerymen. Credit for this excellent picture is due *The Pegasus*, publication of the Fairchild Engine and Airplane Corporation.
- Frontispiece: The Secretary of Defense.

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POM FALLS SHORT

By Lt. Col. Robert F. Cocklin, FA*

ALL AMERICANS who have known war hope that, if it comes again, it may again be fought elsewhere than in our homeland.

Since the conduct of military operations, elsewhere than in the United States, necessarily involves the overseas movement by ship and by air of great forces and tremendous quantities of munitions, it behooves us critically to examine the principles involved, especially in the light of lessons learned in World War II. This discussion deals only with principles and limits itself to the preparation of units up to and including the port of embarkation.

TO STANDARDIZE the overseas shipment of units in World War II, the War Department adopted a uniform system outlined in a directive known as "Preparation for Overseas Movement"—POM, for short—which was designed to insure that all units arrived in the overseas theater with the necessary equipment in proper condition for use. POM was not entirely successful in the accomplishment of these objectives. In the press of warfare, such a gigantic scheme for munitions and troop movements could not be halted to make adjustments. But *now* is the time to analyze the defects in the system and, if possible, to outline a new and a better plan.

During the last war, when troops were assigned for overseas movement they were usually moved to an area some distance from the port of embarkation. Insofar as was practicable, they were notified of their impending shipment far enough in advance to permit rather elaborate preparation for the move. Endless hours were devoted to inspection of all items of equipment to insure its readiness for combat. Teams of inspectors and repairmen were dispatched to the unit from the various technical branches to check over technical equipment. Unserviceable equipment was turned in. Where possible, new and serviceable equipment was drawn in its stead. G-4's, S-4's and unit commanders scurried to every supply installation within striking distance trying to insure that their units had everything they needed.

Every conceivable type of inspection was held. Recalling my own experience, I feel safe in saying that every man and piece of equipment on hand was inpected by at least two dozen different people.

Then came the boxing and crating. Unit carpenters—relatively inexperienced, more often than not—worked night and day building boxes and crates, waterproofing and marking each package with the unit's identification. Packages of every conceivable size and shape were constructed although similar units were carrying identical equipment. Crates were even constructed for equipment on requisition, in the hope that it would arrive prior to departure.

While this was going on the unit commander was required to bring all of his records up to date—packing lists, requisitions, certificates, show-down shortage reports, form 20's and 32's, service records, unit funds, etc. If handled properly, the load of administrative detail heaped on the company and battery commander during this period would have occupied his entire time. With so many details on his mind, it is no surprise that some were neglected.

POM was wasteful not only in time and energy but also in the matter of dollars and cents. The piecemeal drawing of clothing and equipment entailed losses in practically every unit. Not infrequently serviceable equipment was shipped back to technical bases as unserviceable, and replaced by a shipment of new equipment. This occurred because technical personnel were not always available and line officers were not competent to judge the serviceability of innumerable technical items of equipment. The motto was "if there's any doubt, mark it *unserviceable*." And faulty packing and crating sometimes resulted in damage to expensive and vital equipment during shipment.

Technical personnel sent out to service equipment sometimes found themselves without the necessary

*Associate Editor of THE FIELD ARTILLERY JOURNAL for the past eighteen months, the author recently returned to civil life and is now the Business Manager of *The National Guardsman*, the recently established mouthpiece for the National Guard Association.—Ed.

tools and materials to do the job. And overriding all other aspects was a serious duplication of effort and wasting of time that could have been better utilized in other ways.

SOME READERS may feel that, since POM *did get the job done,* the foregoing is mere criticism, for the sake of criticism. This is not my intent. My purpose is to offer constructive criticism of the *principle* underlying POM as we knew it in the late war.

We should adopt a page from the books of practically every manufacturer of our time—*the assembly line,* or *functional specialization.* If this principle be followed, *preparation* for overseas movement will be *centralized* and not *decentralized,* as was the case under the POM of World War II. Specifically, upon the receipt of warning orders, units alerted for overseas movement would *turn in* all items of clothing and equipment except bare housekeeping essentials. At the port the unit would *draw* complete TO/E clothing and equipment *already crated and ready for shipment.* In other words, I am suggesting a principle *completely opposite* to POM.

Let us analyze the advantages of such a system. When a unit is alerted, representatives of the various technical branches would be sent to the unit to supervise cleaning and packing of equipment to be sent by the technical service to centrally located service bases. I submit that the adoption of this principle would in no way lessen the command responsibility for the care and preservation of equipment during the units' training period. Quite the reverse, it would *strengthen* it, since all commanders would understand in advance that their equipment would have to measure up, at turn-in time, to the minimum standards set by the technical services.

Such a complete turn-in of equipment would eliminate entirely the many thousands of man hours lost in preparing requisitions, shortage reports and loading lists with all their attendant confusion and mistakes. A saving in transportation would also result, by the elimination of the need for the shipment of serviceable equipment from the service depot to the unit to be reloaded for shipment to the POE.

Upon receipt of the unit's equipment at the centrally-located depot, *experts* would recondition, pack, crate, and ship it in bulk quantities to the POE, for re-issue later to a departing unit. Assembly-line methods employed in such service bases would eliminate a great waste of time and materials and would insure the expert preparation of equipment for overseas duty. Incidentally, this expert preparation would be reflected in the overseas theater by a lessening of technical maintenance requirements there. Such a system would also result in an economy of technical personnel, always at a premium in wartime. Assembly-line packing would insure a uniformity of boxes and crates and would permit closer planning of shipping space, both by rail and water transport.

The movement of the unit to the POE would be facilitated since only passenger transportation would be required. Upon arrival at the POE, units would be ready to load, immediately after being issued the necessary clothing and personal equipment. Unit advance parties would receive complete organization equipment, already packed and crated.

There are those who will argue that the principle I advance will require a far greater pipeline of extra equipment than past experience indicates we will ever have in war, and particularly in the early stages. My direct answer to this easy criticism is that *past failure must not be made the basis for the retention of an unsound principle,* if such it be.

THERE IS another aspect of POM that I wish to mention. Since it may not be applicable to shipments to all theaters, this idea is set aside from the foregoing overall blueprint.

Warfare in the Pacific Theater clearly brought out the need for special items of equipment superfluous elsewhere. Refrigerators, building materials, and additional medical supplies and sanitary equipment—to name but a few. These items were *essential* to every unit of company size and greater, and should have been shipped with the unit since these items were almost invariably needed *immediately* upon arrival. The elimination of the initial distribution in the theater would have expedited the organization of service bases, and units would not have been deprived of necessities on their arrival because of shortages or breakdowns in the distribution system.

The last war has given us operational experience in areas scattered all over the globe. Climatic conditions don't change, and we now know what we needed in this war to do the job—and will need again if we ever fight in these same areas. Since the requirements vary, these items cannot be included in standard TO/E's. However, it would be practical to prepare "service packets" for the theaters requiring special equipment and *ship them with the using unit.* I can think of few things that would have made for higher morale—hence higher combat efficiency—in our *small* units. And we must never forget that the small units add up to make the big units that win the battles!

Something Happening at Skromptsk

—By Col. Christiancy Pickett, FA—

FOLLOWING THE PUBLICATION of a fantasy entitled "The Last World War" in the August 1946 issue of THE FIELD ARTILLERY JOURNAL, several of the author's friends wrote to ask why he had plunged headlong into World War IV without a word about World War III.

The truth is that the author fears we are going to get a fearful shellacking in World War III and dreads even to think about it, let alone to write about it. One good friend, however, insisted that since we always learn more from our mistakes than from lucky victories, there is no use keeping quiet about it. This author therefore takes his pen sadly in hand to chronicle the events of what we may as well refer to as

THE BLITZ OF 1966

A veteran of World War II would hardly have known the Army as it was organized in the spring of 1966. Steady trends following World War II precluded a standing Army of any strength, and although the National Guard and the Organized Reserves continued to exist on paper, the unwillingness of legislators to pass a universal military training act over the protest of a noisy radical minority had reduced the civilian components to a shell. At length the War Department gave up and shaped its entire military outlay on the passive defense, though one would scarcely believe this after reading the speeches of American orators who visited foreign capitals and proclaimed that we were embarked upon a policy of aggressive, brutal imperialism, aimed at enslavement of the masses.

Now the passive defense against a simultaneous, transpolar launching of atomic-headed, guided missiles is no easy problem for anybody's General Staff. (Oh, yes, we still had a General Staff, though a former American cabinet member had tried to talk it out of existence on the ground that, having hung the members of the Nazi General Staff as war criminals, we would scarcely be consistent if we maintained a similar organization. By abolishing it, he shouted, we would reassure our comrades on the other side of the globe as to our sincerity about disarmament.)

FLUNKED TO A GOLDEN AGE

So the General Staff had huddled, studying the situation and the means at its disposal. As an experiment, a couple of hundred generals and colonels were sent to study electronics at the Massachusetts Institute of Technology. They were all superior officers, outstanding for their leadership and common sense. They flunked out to the last man.

"Give us the good old days," they said, "when fellows fought with knives. But if there must be world-girdling guided missiles, let the professors figure them out. We'll shoot 'em."

Having failed to make scientists out of high ranking officers, the War Department then made the wise decision to make high ranking officers out of the scientists. Thus the Electronics Corps was born, and with it came a golden age of research in the American Army. It was this fine corps of gifted gentlemen which developed the principle of rocket diversion and laid the plans for the score of gigantic, electro-magnetic power stations which by 1960 were completed all over the Arctic regions of Greenland, Canada and Alaska. At the secret test in 1958, a rocket was fired from the Hudson Bay region and guided toward an uninhabited island in the Aleutians. Notwithstanding its ground station's efforts to keep this rocket headed for its target, the powerful Alaskan rocket-diversion station turned it forty degrees off its course as it passed over Juneau, causing it to fall harmlessly into the Pacific Ocean several hundred miles south of its target.

But it was well known that a diversion station could not keep the power turned on for very long at a time. For this reason, our war planners decided that the only effective method of stopping an attack by guided missiles would be to find out when it was to happen. It was for this purpose that the War Department formed the Surveillance Corps of over eighty thousand noble, self-sacrificing, courageous men and women. Communists shrieked that they were spies, and indeed they were. What they found out could not be published lest it cause national hysteria; hence the officers of the War Department who had to appear each year before a Congressional committee to justify the appropriation for the maintenance of this Corps had no choice but to squirm and take it when a legislator from the great-open-spaces called it "The American Gestapo." In 1964 it had to be

related to a secret session of the Congressional committee how the reports from this Corps had given us warning of an attack which failed to materialize only because the enemy discovered that we had learned about it in advance.

LEARNING THE ROPES

In only one respect was the Army of 1966 anything like that of 1947: it had developed the 1947 scheme of decentralized administration into a gigantic, pyramidal system of higher headquarters, each filling miles of corridors with desks, typewriters, conference rooms, cafeterias, mailing rooms, mimeograph machines and message centers. The prologue to Act I, Scene 1, of World War III was laid in such a place—Headquarters, Warning Defense Command.

Let us turn back the "past" dial of our television set and tune in a picture of the room assigned to the Reports Branch of the Arctic Information Bureau in the G-2 Section of this Headquarters. (See cut.)

Here we see the officer in charge, George W. Burke—a mere Lieutenant Colonel, since he had just been commissioned two years ago. The room was actually presided over by Miss Doris Williams, stenographer, whose four years on the job were a record for the section, and who had taught fifteen young lieutenant colonels how to draft an indorsement and answer a buck sheet. She knew all the ropes and was held to her task by the hope that some day she would be assigned a new lieutenant colonel who was not married.

Burke turned his aching head away from the sunny window and the velvet green golf course outside it, and reached for the pile of papers that a messenger had just dumped in his "In" basket. He knew what they were—drafts that Miss Williams had typed for him a couple of days ago; they had come back from a tour of the section with a neat column of initials in the right margin. There wasn't an item of importance in any of them, he knew; the important thing, he had learned, was to word them exactly as Miss Williams advised, using the stock phrases so dear to the executive of the G-2 Section; that is, unless that officer were on leave, in which case one used the favorite phrases of the assistant to the executive of the G-2 Section. In no case must anything resembling a definite decision be written into any of them without attaching the purple slip that would take it on a week's tour through channels to the Chief of Staff's office.

"Whatever you do," cautioned old General Kommer, the G-2, "don't get this Headquarters out on a limb. Usually all you have to do is to invite attention to the previous indorsement and send the papers on."

"Here are the drafts, Miss Williams," said Burke wearily. "Type them up final and send them around again for everybody's initials."

"It's nearly four o'clock," Miss Williams objected. "They wouldn't go out tonight if I did."

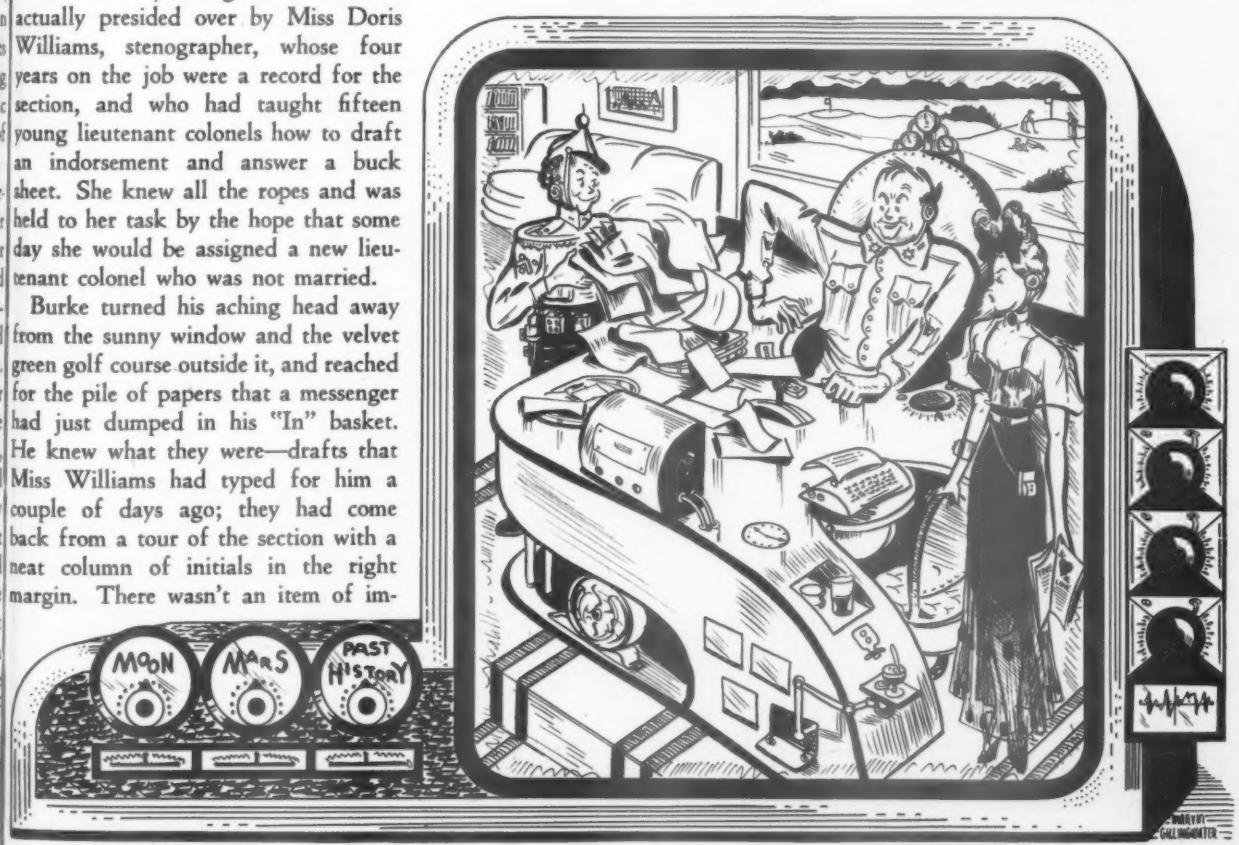
"O-o-o-kay," agreed Burke absently.

Miss Williams returned to her copy of True Confessions, with one eye, however, on the clock in her desk.

HOT STUFF

It was not until late the next day that Miss Williams discovered some papers attached to one of the drafts which did not belong to it. This happened often because Miss Wiggs, the Chief Stenographer, loved to practice economy by using old paper clips over and over again. In this case, the papers proved to be incomplete, including only the snowflake, the 3d indorsement and two of the six inclosures. No doubt the rest had slipped out of their old, bent paper clip and hooked themselves onto some other papers. Meanwhile, as they were *confidential,* a worried Miss Wiggs joined the search for them, but they were not found until the following day when the clerk in the Communications Branch sifted them out from a stack of new call sign assignments. The papers had been in the Headquarters five days now, three of them in the G-2 Section, but Miss Wiggs had put a nice generous deadline of eight days on the snowflake that was attached to them,

(*Continued on page* 311)



Airborne artillerymen moving a 75mm howitzer into position through deep snow.

COLD WEATHER OPERATIONS

By Col. Paul V. Kane, FA.

How can men live and operate efficiently in very low temperatures? What clothing must they wear and what shelters will they use? How reliable are prime movers? Will gasoline engines start? Will present weapons function properly?

Having commanded Task Force Frigid, the author of this article, pictured below, is the man best qualified to answer such questions. And our JOURNAL is proud indeed to present the first conclusive type article on this subject.

Then a Brigadier General, during World War II Colonel Kane commanded the 96th Infantry Division Artillery until 1944, when he became the III Corps Artillery Commander.—Editor.

WHENEVER THE QUESTION of Arctic operations is discussed, it brings to mind at once the disaster that befell Napoleon's Army in 1812 and that of Hitler, one hundred and thirty years later, in attempting to conduct military operations under conditions of extreme cold without proper equipment, clothing and shelter.

What happened to Napoleon and Hitler could, and probably will, happen again to any commander who ventures into extremely cold regions without sufficient preparation for the problems that will confront him and without the "know-how" necessary for cold weather operations. To get this "know-how," General Jacob L. Devers directed that a Task Force be organized and sent to Alaska to test present equipment and weapons during the winter of 1946-47.

GENERAL

It would have been impossible to select a better winter for cold weather tests. Cold weather came early and started breaking records as soon as it arrived. Although the all-time record low for Alaska was not reached, the little Canadian town of Snag, just below the Alaskan boundary, set a new record low for the North American Continent when the thermometer registered —82.3° F. It may be worth noting here that Alaska has never had the lowest temperature for the Continent, nor has that temperature ever been established within the Arctic Circle.

During the entire test period, there were 113 days with the temperature below zero and 68 days with the temperature below —20° F. Conditions such as these are ideal for "cold-soaking" weapons and vehicles, and giving a thorough test to clothing and shelters.

The Task Force was assembled at Ford Ord, California, during July and August 1946. After a period of rigorous training and indoctrination for the severe test that lay ahead, the Task Force sailed from San Francisco on 7 September for Whittier, Alaska, where it arrived just as fall was making its appearance. The early arrival of the personnel in Alaska allowed all individuals to become acclimatized before the very severe weather arrived. This is extremely important and is a precaution which should always be provided for, if possible, in any future operations in extremely cold regions.

Testing began on 1 December and continued without interruption until 15 March when the temperature had risen to a point which made any further testing impractical. The directive called for a total of 380 tests. The smallest item tested was the waterproof match; the largest was the M26 Tank, weighing 45 tons. The following are a few of the highlights of the winter testing season.

VEHICLES AND PRIME MOVERS

Anyone who has experienced difficulty in starting his automobile on a cold morning can well imagine the troubles of the motor officer who has the problem of starting twenty thoroughly "cold-soaked" vehicles at a temperature of —40° F or lower. Many methods were tested by the Task Force with varying degrees of success.

One method which gave the greatest success from the operational viewpoint was that of assembling vehicles in groups of ten or twelve and then covering the entire group with tarpaulins. Heated air was then pumped into the inclosure from a Heater, Tent, Gaso-

line, commonly known as the Herman Nelson Heater. (See cut.) This method has the advantage of keeping the whole chassis warm. As the air from the Herman Nelson Heater is uncontaminated, personnel could sleep on the ground inside the inclosure or in the vehicles without any danger of asphyxiation. The chief disadvantage of this method is that it precludes dispersion of vehicles and consumes a large quantity of gasoline. The Herman Nelson Heater consumes four gallons of fuel an hour; therefore, it requires almost an entire drum of gasoline to keep ten vehicles warm during a twelve-hour period.

Another method tried was that of dilution. This method is feasible where well trained personnel are available, but it has many distinct disadvantages. When the temperature was below —20° F, it was the practice to dilute the engine oil at evening motor stables with 20% of gasoline. After adding the gasoline to the oil, the engine was run for ten minutes to allow the gasoline and oil to mix thoroughly. At temperatures above —40° F, this mixture will remain fluid and permit starting the engine in the morning. When the engine is started after dilution, it must be brought to operating temperature and then run for at least a half hour before putting a load on it. This precaution is necessary in order to "burn off" the gasoline and bring the engine oil back to its normal viscosity as soon as possible. If this precaution is not followed to the letter, the third or fourth day of dilution will see scored cylinders and burned out bearings. When engine oil is diluted, it is customary to cut all gear lubricants with diesel oil or fuel oil as there is no good purpose served in starting the engine of a vehicle if the power train remains frozen. The percentage of diesel oil used in this procedure varied from 5% to 50%. The principal objection to the dilution method is that it is time consuming and, at times, unreliable. If the ambient temperature is so low as to preclude bringing the engine to its operating temperature, serious damage may be done to the engine before the driver realizes that he has inadequate lubrication. There is a definite element of danger in the dilution method, in that pockets of vaporized gasoline may be built up in the engine compartment. This is especially serious in extremely low temperatures as static electricity becomes a positive hazard in a cold dry climate. One explosion resulting from this method is sufficient to make all drivers unduly cautious.

The use of a special primer fluid in the primer is a very valuable starting aid down to —10° F. In combination with other aids such as slave cable and Herman Nelson Heater, it was used at the lowest temperatures.

Another method of starting cold engines is to blow heated air from a Herman Nelson Heater, or the Auxiliary Cold Starting Aid Kit (Slave Kit),* around the crankcase and intake manifold. This is one of the safest methods but requires at least a half hour under the most favorable conditions and on several occasions required as much as four and one-half hours.

Still another method, which is sometimes used to assure ready starting of engines, is that of cycling or running the engine at intervals properly spaced to keep the oil fluid enough to permit prompt and easy starting. Except at extremely low temperatures, running the engine for one hour out of four will usually make it possible to start without the use of auxiliary heat. This method consumes a great deal of gasoline and also adds materially to the wear and tear on the engine. On several occasions, oils were blended to obtain a mixture which would permit easy starting and provide adequate lubrication during operation. This should be done only under the supervision of a lubrication expert, as some oils are antagonistic or non-miscible and serious damage may result to an engine when using a blend of this type.

Engine heaters, including the standby type, installed in the engine compartment and the under-chassis type usually placed on the ground beneath the engine are serious fire hazards, in their present state of development, and must be used with caution.

The above method of starting cold engines are all expedients which can be resorted to with small groups of vehicles.

All lubricants tend to stiffen and lose their lubrication qualities as the temperature drops. The chief concern of the motor officer is that of keeping all lubricants in the vehicle at such a temperature as to assure easy and quick starting at any temperature and adequate lubrication while the engine is running. The ideal method of assuring that vehicles may be started promptly in extremely low temperatures is to provide engine oils and gear lubricants that will remain fluid at the lowest temperatures expected and which will give adequate lubrication at any temperature encountered.

Pure antifreeze will solidify at —18° F. If mixed with water in the ratio of 60% antifreeze and 40% water, it will remain fluid to —67° F. It is therefore advisable to issue antifreeze in the proper solution at extremely low temperatures.

The present lead acid battery is not well suited for use in extreme cold. It

*When the Slave Kit is used, additional power may be applied to the battery terminals by means of the cables connected to the Slave Kit generator. A bus bar in this kit permits the use of 6, 12, or 24 volts, as required.

Artillery vehicles, having been "tucked in" for the long Arctic night, are being kept warm by a Herman Nelson Heater (250,000 BTU).

will not take a charge below 0° F, and a discharged battery will freeze and burst at —40° F. Even a fully charged battery is only 22% efficient at —40° F. It is therefore apparent that the motor officer in the Arctic must take steps to see that his batteries are kept warm at all times and well protected from windchill.

In general, the Diesel engine is more reliable at extremely low temperatures than the gasoline engine. However, the advantage in horsepower per pound of weight is still in favor of the gasoline engine. This becomes extremely important in operations in deep snow where every effort must be made to keep the unit ground pressure at a minimum in all over-snow vehicles.

In general, it can be stated that wheeled vehicles are of very limited use in deep snow. This applies as well to half-track vehicles. They can be used only on cleared or hard-packed trails and roads. The full-track vehicle is an absolute necessity in the northland, and the lower the ground pressure is the greater will be the mobility of the vehicle in the light powdery snow found in a dry, cold climate.

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Present types of ammunition functioned satisfactorily even at very low temperatures. In combat, air bursts should be used to the maximum extent possible. Present ammunition and fuzes were found to be excellent for penetration of ice.

Although foxholes in the earth will probably not be used extensively in Arctic warfare, a very serviceable foxhole can be made in snow. Packed snow offers much more protection from shell fire and small arms fire than one would believe until he has seen it demonstrated.

Self-propelled artillery has a distinct advantage over towed artillery in extreme cold and deep snow. It is extremely difficult to emplace towed pieces under the conditions encountered in Arctic warfare. On one occasion, it required a total of 243 pounds of explosive to blow a crater large enough for a Bofors antiaircraft gun. On another occasion, it required 63 minutes to emplace a 105mm howitzer at —60° F. This operation included chopping holes for trail spades in the frozen tundra with axes. The disadvantage of a high silhouette, which is often mentioned in connection with self-propelled artillery, is less apparent when operating in 40 inches of light snow.

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Several different solutions were used in cleaning gun tubes after firing. The antiaircraft units preferred carbon tetrachloride at extremely low temperatures. The field artillery units all used a solution of ethyl alcohol, soda ash and water with good results. A solution of ethylene glycol and water did not give good results and caused ice crystals to form in the grooves of the tube.

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OBSCURATION

There is one condition which will always plague the artilleryman at temperatures below —40° F and that is obscuration caused by the formation of ice fog. This is a condition which is very rarely encountered in the temperate zone but is one of the most serious obstacles to operation in the Arctic or sub-Arctic regions. At very low temperatures, the moisture introduced into the atmosphere, either from the exhaust pipe of a gasoline engine, the muzzle of an artillery piece, burst of projectiles, or from the human lungs, cannot be absorbed but is held in suspension in the form of very small ice crystals. These crystals do not fall to the earth but continue to build up a dome of fog over a bivouac area or an artillery firing position and target area. A large dome of fog can soon nullify the best of camouflage. It obscures the target for the tank gunner, as well as the artillery gunner, and it seriously limits the vision of all drivers in a convoy except the leading driver. One can quickly appreciate how serious a problem this is for motorized units when it is realized that for every pound of gasoline burned in a gasoline engine 1.2 pounds of moisture are forced into the atmosphere through the engine exhaust. To date, no solution has been found for this problem.

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One of the most important problems that a commander in the Arctic regions must concern himself with is that of shelter, since man cannot remain in the open for long periods. All shelter must be carried by the organization itself, as practically none is available in regions as sparsely settled as Alaska or Northern Canada. The small two-man shelter tent has very limited use except as an emergency shelter. The shelter halves, however, are very useful as ground pads or in constructing lean-to shelters. The ideal tent for Arctic use is one made of soft, light, pliable material which will not stiffen at low temperatures. It should be low and should have a liner and a double ground cloth. All tents must be provided with an asbestos collar to permit the use of a stove. Tent stoves for use in Arctic or sub-Arctic regions should be designed to consume any type of fuel available, including wood, coal, or gasoline.

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One of the most serious problems in cold weather operations will be that of providing shelter for maintenance crews so that vehicles and aircraft can be fully maintained in the field. Outdoor maintenance at —50° F is practically impossible, and no organization can operate for any great period of time unless provision is made for shelters which will permit maintenance personnel to work under normal conditions.

No discussion of shelters would be complete without mentioning the "Wannigan," which will always play an important role in any operations in extreme cold and deep snow. This is a box-like shelter built on a sled or on skids and capable of being towed over roads or cross-country. It can be used for many purposes such as: warming huts, latrines, aid stations, telephone centrals, small kitchens, and even sleeping quarters for tank crews and crews of self-propelled artillery. It should be of light yet sturdy construction with a low center of gravity and be no wider than the narrowest prime mover which will be used to tow it.

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The ideal uniform for Arctic use is one which is light enough to prevent excessive perspiration while the wearer is engaged in hard labor and yet one which furnishes enough insulation to prevent excessive loss of body heat even at extremely low temperatures and in penetrating winds. The new fiberglass clothing offers much promise. It is a much better insulator than wool and, at the same time, is much lighter in weight. The ultimate in uniforms for Arctic operations will probably consist of three layers: the first layer should be light, porous, loose fitting, woolen underwear with the drawers shaped like the present gym trousers; the second layer should consist of woolen trousers, or cotton trousers with pile chaps, and loose fitting jacket, either of fiberglass or wool with pile lining; and the third layer should consist of a pullover parka with a deep hood and three-quarter-length trousers, both of fiberglass or similar material. The mukluk worn with one pair of felt socks and three pairs of ski socks is satisfactory for low temperatures. For extremely low temperatures, a combination of the felt shoe and an over-mukluk will probably be necessary. Although the mukluk which the Eskimo wears is a moccasin type, without foot support, it is difficult for the American soldier to wear this with comfort, even in soft snow, inasmuch as he has been accustomed to wearing shoes since childhood. Any mukluk designed for use of American soldiers will probably have to have foot support. The parka hood with deep fur ruff is one item which has been copied from the Eskimo's clothing and which will probably always be used on the Artic uniform, as it provides a layer of still air in front of the face which prevents frostbite. The parka hood with ruff limits the side vision of the wearer and in the case of certain drivers will have to be replaced by a cap and face mask.

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Engineer troops spraying water onto ice bridge. The water in freezing forms a firm binding for the logs.

Brig. Gen. Doyle O. Hickey of Army Ground Forces Development Section examines his map before going aloft in a Bell Helicopter.

or drive a tank. Most men can maintain body heat and remain comfortable while they are active during the day. It is when they go to bed at night that their real troubles begin. Very few men can sleep well at temperatures below —40° F. It is at this critical temperature that artificial heat must be furnished.

RATIONS

Since food is the fuel of the human heating system, the question of rations and food intake is of far more importance in the Arctic regions than in the temperate regions. While 3,400 calories will suffice for a soldier in temperate climates, he must have at least 4,500 calories in extremely cold climates, and at times he will consume as much as 6,000 calories a day. If engaged in strenuous physical exercise at low temperatures, he should have a mid-morning and a mid-afternoon snack consisting of about 800 calories. An Arctic ration should provide for ample fluid intake in the form of hot and appetizing beverages, as the danger of dehydration is ever present. Although the individual loses little body moisture by perspiration, at temperatures below 20° F, he loses 800cc of water through his lungs every twenty-four hours.

"A" rations will probably not be issued except in rear areas or where a heated shelter is available as a mess hall. At —50° F a serving of hot oatmeal placed on a meat can out of doors will freeze to the can before it can be entirely consumed by the individual.

The present "E" ration gives excellent results in cold weather operations. It can be easily heated in a standard GI can fitted with the immersion heater over the standard field kitchen heating unit. Since the ration is eaten directly from the can, it usually remains hot until consumed. If paper cups are used for beverages, the whole problem of dishwashing is completely eliminated. Care must be exercised in the heating of frozen "E" rations directly over an open flame burner, as the frozen contents of the can may scorch at one end before they even thaw at the other end. It appears that "E" rations can really take rough treatment in the Arctic. They can freeze and thaw and still remain wholesome and palatable provided the tin container is not ruptured.

SMALL ARMS

Little need be said about small arms, because there is no difficulty with these weapons in extremely low temperatures. Automatic weapons, when fired dry, are sluggish and oftentimes produce stoppages. They should be thoroughly cleaned and given a thin coating of oil before use. All firearms give much better performance if kept out of doors. If brought into warm buildings or tents they will collect condensation which may later freeze and cause a malfunction. Weapons will not "sweat out" powder residue if left in the open. The normal cyclic rate can be maintained on all automatic weapons by following normal maintenance procedure.

HAZARDS IN THE ARCTIC

The individual operating in the Arctic or sub-Arctic regions finds himself confronted with many hazards that are rarely found in the temperate zones. The first and most important of these is frostbite. First degree frostbite is not serious but second and third degree frostbite can have serious consequences. If men work in small groups, there is less danger of freezing than when working alone. The small white plaques characteristic of frostbite will be quickly noticed and corrective measures taken.

Carbon monoxide poisoning is another hazard which must be guarded against at all times. When stoves and heaters are operated at full capacity in tightly closed vehicles, tents and shelters, there is a possibility that carbon monoxide gas may be present in sufficient quantities to cause severe illness or death. There is no way of detecting its presence except by a colorimetric indicator. Constant attention to ventilation is the only safeguard against this danger.

Suffocation by carbon dioxide is another hazard which may be encountered in closed vehicles and shelters unless provision is made for proper ventilation.

Snow blindness is a serious hazard which increases as the sun rises in the sky in late winter or early spring. It is more serious in the barren lands north of the tree line. It can be prevented by wearing colored classes.

The danger of fire is ever present in the dry cold climate of the far north. Buildings or shelters of any combustible material dry out so thoroughly in

winter that a fire once started in a building is very likely to consume the building in short order. Fire prevention is one of the most important subjects in the training of units for Arctic service.

To the above hazards must be added that of driving vehicles on ice-covered roads in dense ice fog where visibility is reduced to twenty-five yards, and also that of driving vehicles across thin ice.

Great care must be exercised in driving cross-country over snow, as ditches and steep arroyos are often completely filled with wind-blown snow and, therefore, not easily detected by a driver.

All of this adds up to the fact that the individual operating in deep snow at low temperatures must be ever on the alert for the dangers that lie about him. However, a good leader must be on guard at all times to prevent his men from losing their aggressiveness and self-reliance through undue caution.

PERSONNEL

Arctic operations will always be classed as special operations and will call for very carefully selected personnel. Troops selected for Arctic or sub-Arctic operations should be between twenty and thiry-five years of age, in excellent health and thoroughly trained in their particular specialty. They should be self-reliant, resourceful and —above all—mentally mature and emotionally stable. If complete selection is not possible, all organizations going to the Arctic should at least be screened to eliminate those of low mentality and, as well, the emotionally unstable individuals. The soldier who has a tendency to drown his sorrows or his loneliness in a bottle is a positive menace in Arctic regions. There is no place in the Arctic for the psychoneurotic.

Inasmuch as the American soldier is completely out of his natural environment when he is in the Arctic regions, he must be acclimatized and "accustomized" as far as possible before leaving the U. S. In other words, he must be conditioned, both physically and mentally, for the tasks he will meet in the northland. Any failure to observe this precaution will exact a severe penalty in subsequent operations.

LEADERSHIP

While good leadership is extremely important in any military operation, it becomes absolutely essential in the Arctic regions. As the temperature drops, inertia builds up rapidly in both man and machine. The individual is so completely surrounded by obstacles at low temperatures, and so concerned with his own personal discomfort, that he is constantly inclined to take "time out" rather than continue the game. It is at this point that good leadership, from the top level down to the squad leader, can tip the balance toward success. The successful leader in the Arctic must not only know how to urge his men and spur them on, but he must also keep in mind their limitations and make every effort to spare them every unnecessary hardship. He must realize that a man cannot walk as fast nor as far in the Arctic as he can in the temperate climates.

The successful leader will learn to conserve every bit of energy and strength in his men for the final push. In combat, he will never require a soldier to walk through deep snow when there is a vehicle to transport him.

As a result of the exercises of the past winter in Alaska, it seems safe to conclude that, given proper equipment, weapons and shelter, the American soldier can operate in extremely low temperatures provided he has the necessary motivation.

In any military operation in the Arctic, the soldier will find himself confronted by two enemies: first, his military enemy, who may give him respite occasionally; and second, the elements, which will never give him a break. In his struggle with his military adversary, courage, superior training and resourcefulness may compensate for inferior weapons or equipment, but in his encounter with nature, man must have adequate clothing, shelter and food or he will find his final resting place in the Land of the Northern Lights.

In a temperate climate, a wounded man may remain for hours on the battlefield and suffer no serious harm. At temperatures of —40° F, a seriously wounded man would freeze to death in about two hours unless placed at once in a casualty bag and evacuated.

If the seeds of time ever produce a situation in which the American soldier is called upon to operate in the extreme cold of the Arctic regions, it will be the vital concern of every citizen of this nation that he be provided the best possible clothing and shelter.

A Tank Transporter, M25, carrying a medium tank, comes to grief in crossing the Tanana River, the rear wheels having dropped into a small crevasse. This photograph was taken at —56° Fahrenheit.

Learning What Hit Us

By Maj. Gen. John A. Crane, Ret.

WHILE ARTILLERY OFFICER (US) of Allied Force Headquarters in North Africa and Italy, I found it extremely difficult to keep track of just how the enemy was causing us the most casualties — of where our guard was down. There were no means provided for learning accurately the effectiveness of the enemy's arms and weapons. Army Regulation 40-1025 specified that the nature of the missile causing each combat injury should be reported; in practice the valuable tactical data which this regulation was intended to furnish was not available. In the first place, the classifications of causative agents used during the greater part of the war were either obsolete or too general to be of tactical value. In the second place, statistical processing of wound records by causative agents through use of business machines was not general, and physical check of the records themselves was too heavy a task for combat theaters to undertake.

I decided that more data was needed on the anti-personnel effect of white phosphorus in shells and mortar bombs. Many field artillery officers believed that the painful character of the burns inflicted made WP a "terror weapon," and mixed HE and WP in neutralization and defensive fires. Stocks of WP ammunition began to look inadequate and the need of expanding production facilities in the United States was discussed. Chemical Warfare Service tests with 4.2-inch mortars at Edgewood Arsenal indicated that dummies in deep slit-trenches and foxholes received many burns from phosphorus particles while high explosives fired under the same conditions produced few hits. German use of WP, on the other hand, was very modest, and did not cause alarm among our forces when it was encountered. An AFHQ staff officer who had commanded an infantry battalion cut off behind German lines in Tunisia reported that he had dispatched three runners back to our lines after his communications had been knocked out and had lost them all. He decided to try getting through himself. Our artillery was firing mixed HE and WP into a zone which he had to cross. He got through all right, and said he had been able to brush off WP particles before they did any damage. High explosive, he maintained, was far more terrorizing. The Medical Department of AFHQ was asked to settle the controversy, not with theories or inconclusive tests on a small scale, but by well-prepared statistics of general battlefield experience. The Theater Surgeon ordered a simultaneous survey of eight hospitals containing large numbers of German PW patients. The results of this survey indicated that the anti-personnel effect of WP was slight compared with HE. Artillery tactics and ammunition procurement for the Theater were altered, and the lesson was noted throughout the Army.

The importance of this preliminary survey led me to request a second, more general, survey. The technique used before was developed, and final data were tabulated by a machine records unit. Every combat casualty in the Mediterranean Theater of Operations as of midnight, 25 October 1944, was interviewed by a medical administrative officer or by an ambulatory officer patient. When the interviewing officer was convinced that the patient actually knew what hit him, a mimeographed form was completed, from which a machine records punch card was prepared at a later date. This form contained certain general questions of interest to MTO Headquarters at the time, questions to determine the relative effectiveness of fox-holes and slit-trenches, the relative protection against mines afforded by the various types of armored vehicles, etc. The form also carried a modernized classification of causative agents in battle casualties, which is proposed for Army-wide standardization. This classification follows:

1. Artillery—percussion fire
2. Artillery—air-burst fire (including tank fire and rockets)
3. Mortar
4. Small arms — terrestrial weapons (including bayonet, trench knife, etc.)
5. Aerial gunnery
6. Aerial bombing
7. Mines and Booby traps
8. Chemical warfare

It will be noticed that this classification avoids such meaningless catch-all terms as "high explosives," which might mean artillery or mortar fire or aerial bomb, or "gunshot" which might or might not mean small arms fire exclusively. It will be noted further that the list of eight categories is not excessively long or complicated.

The MTO survey under discussion reported on 14,000 casualties—an estimated 40% of the patients interviewed. Cases were omitted from the survey if patients were rendered unconscious when they were hit, or for any other reason could not convince the interviewing officer that they were certain of the cause of their wound. The sample taken was considered amply large to afford an accurate representation of the prevalent conditions on the Gothic Line, north of Florence.

German mortar fire furnished, on this survey, the sensational figure of 30% of battle casualties.

This was accepted as a challenge by the Theater Commander, and *on the basis of this medical survey* counter-mortar organization and tactics were

developed along the lines of field artillery counterbattery: they were reflected in Army-wide changes in infantry T/O & Es and a new War Department Training Circular was published. These steps achieved success in the Mediterranean and in Europe, *once the gravity of the situation was demonstrated to higher headquarters.*

AR 40-1025 now requires that the missile causing a combat casualty be stated in all cases. The present article advances three proposals to further the purpose of this requirement:

1. That the causative agent be stated only when definitely known. To avoid distorted statistics, much care should be taken to see that the entry is fact, not fancy. A preponderance of returns marked "unknown" is preferable to distorted figures; application of accepted principles of sampling makes partial data adequate if it is soundly compiled.

2. That the MTO classification, or one like it, be standardized. Statistical data will then be homogeneous. A short classification of causative agents in combat casualties should be designed to extract the maximum tactical value from our casualties.

3. That business machines be used in all active theaters to keep a running account of casualties by types of causative agent. The loss of the patient from the front, the care and skill lavished on him, and his personal suffering should not be wasted, but should buy us the *lessons of experience.* Causative agent statistics were proved to be of great importance in the NATO in World War II.

What objection could there possibly be to these simple proposals? Harassed doctors in the field are not interested in more red tape, particularly if it has no medical significance.

Medical Corps officers of the United States Army have a dual role: as soldiers and as doctors. The armies of olden time were accompanied by surgeons who were civilians, hired by contract. Such men could devote themselves to their patients and doubtless had far less paper-work to plague them. Military doctors in modern war are cogs in one vast machine, geared up to the fullest to crush the enemy. They are soldiers first and humanitarians second.

Airborne Survey

By 1st Lt. John V. McNally, FA*

NIGHT SHROUDS the low rolling countryside. But the darkness has a thousand eyes as the defenders, in watch-towers and on hillsides, sweep the skies with their glasses as they watch . . . and wait. The spidery arms of radar installations slowly swing back and forth. The shoreline is a thousand miles away, the enemy more thousands of miles away. But there can be no security — an airborne attack can reach anywhere, anytime.

Even as they watch they are already lost. Twenty minutes ago a lone plane droned overhead, slipping thru the elaborate web and, skimming near the ground, discharged twelve parachutists. They were the pathfinders and now they are busy at work in the darkness, spreading out their panels, readying smoke signals, operating their radar and radio equipment.

And now it comes; the far-off sound of thunder, the faint streaks of ackack on the horizon. The throbbing increases until the ground seems to tremble as a long line of planes appear. Flares suddenly burst forth on the ground and in a few moments the great air armada is roaring overhead and the sky is full of swaying chutes as far as the eye can see. There is the ordered confusion of collapsing chutes on the ground; men tumble and roll with the force of their landing; signal lights flash and there is the sound of men running in the dark; calls and commands.

And now another wave of planes approaches and the sky rains down the howitzers, the ammunition and the cannoneers.

Somewhere in this indescribable melee of men and equipment, flares and parachutes, the airborne survey section must land, complete with instruments, ready to move off and go to work. Here the surveyor does not move forward with his equipment in orderly fashion. Here he lands, automatic weapon in hand, his face blackened, his knife strapped to his boot. He must be ready first to join in the fire fight if necessary and then, afterward, be ready to go about his business. He may lose some of his section and be required to take over jobs other than his own and may even be required to figure out a survey plan of his own.

WORLD WAR II METHODS

The Survey Section of the 82nd Airborne Division Artillery had a checkered history in World War II. In the Sicilian campaign the Survey Officer and Survey Sergeant, together with eleven other picked men from Headquarters Battery as part of an advance party, jumped with a combat team, with the balance of the section scheduled to arrive the next day by glider. They took with them one aiming circle, tape, pins, etc. These items, securely packed into a bundle with radio equipment, made a door load which was pushed out the door of the plane at the moment of jumping. In prepara-

*82nd A/B Division Artillery Survey Officer.

tion for the drop, the wooden supports were removed from inside the aiming circle case and the head of the circle was packed in place tightly with rags. Then the equipment, plus the radio and several batteries, was rolled in the canvas-and-felt cover. The bundle was protected by two heavy pads at each end and a parachute attached to the bundle. This was the standard method of dropping at that time. The bundle landed in an olive grove and the materiel was found in good order.

The next airborne drop involving the Survey Section was in Normandy. At this time two aiming circles (packed as mentioned above) together with the usual equipment (this time including a plane table for reinforcement) were dropped as a parachute load. As the drop zone was astride the Merderet River, fate decreed that this particular bundle should land in the deepest of the channels, making it impossible to be recovered in the pre-H hour of darkness.

The next airborne drop was Holland. This time the entire Survey Section came in by glider. As the equipment was to travel in a jeep trailer and be accompanied by six men (the capacity of a CG4A glider) it seemed feasible to bring the transit and accessories. Packing the transit for a glider landing presented a problem, although not nearly as insolvable a one as dropping it by parachute. We removed the transit from the wooden case, lined the case with felt, and carefully forced the instrument back into the box, packing the spaces left with strips of woolen cloth. This arrangement worked out satisfactorily, although had the assembly after landing been too rushed this particular trailer would have been left behind in favor of other loads of ammunition, etc.

PRESENT METHODS

While the methods used during the War were the best that could then be devised, new developments in airborne tactics and techniques — dropping of the howitzer completely assembled, and the possibility of great "airheads" of the future comprising divisions, corps and even armies—made it seem desirable to have a compact survey section which could land and go into action immediately, free of the necessity of locating equipment bundles or waiting for jeeps to pull off trailers.

The 82nd Airborne Division Artillery Survey Section has tried out several methods of dropping survey sections and are currently using a method which has worked out satisfactorily.

Figure 1 shows the surveying equipment carried by an experimental seven-man section. The aiming circle heads are removed from the legs, and the release buttons are taped down so the needle cannot be jarred loose. The steel tapes are removed from the carriers, looped into a figure eight, and the figure eight snapped into a loop. Pins are taped together to protect the jumper from the points when landing, and the points of the plumb bobs are unscrewed from the bobs and carried separately in the pocket.

The aiming circle legs and the range pole (which Ordnance cut and rewelded into three sections) fit neatly into Griswold containers, two of which are shown in Figure 1 at the right of the equipment display. These are fabric contrainers, lined with felt with a zipper closure, used primarily for jumping small arms. They are hooked on to the parachute harness near the shoulder. The aiming circle heads are wrapped with the clothing ordinarily carried in the upper section of the back pack. When imbedded in the center of the pack it will ride to the ground safely. It is also possible to carry the night-lighting device in the pack or the Griswold container.

The tapemen carry the tapes (in pockets) as well as plumb bobs and tags and pins. And, of course, all men carry notebooks and maps on their person.

Figure 2 shows the section ready to emplane. The Griswold containers have been hooked onto the body harness of the instrument men. The back packs, as shown in the photo, are carried slung over the head and hanging in front, just below the reserve parachute. These contain the aiming circle heads, but the possibility of landing directly on the bag is remote.

Certain of the items mentioned above may seem superfluous but experience has shown their importance. Tags, for instance, are difficult to improvise and there are scrub areas where too much time is lost looking for sticks to use as rods. The lack of a transit is apparent, also, but up to this time we have not had the temerity to try 'chuting that instrument to the ground — which entails a dead drop of 10-15 feet.

TRAINING

The training of any parachutist must be predicated on the fact that he is an

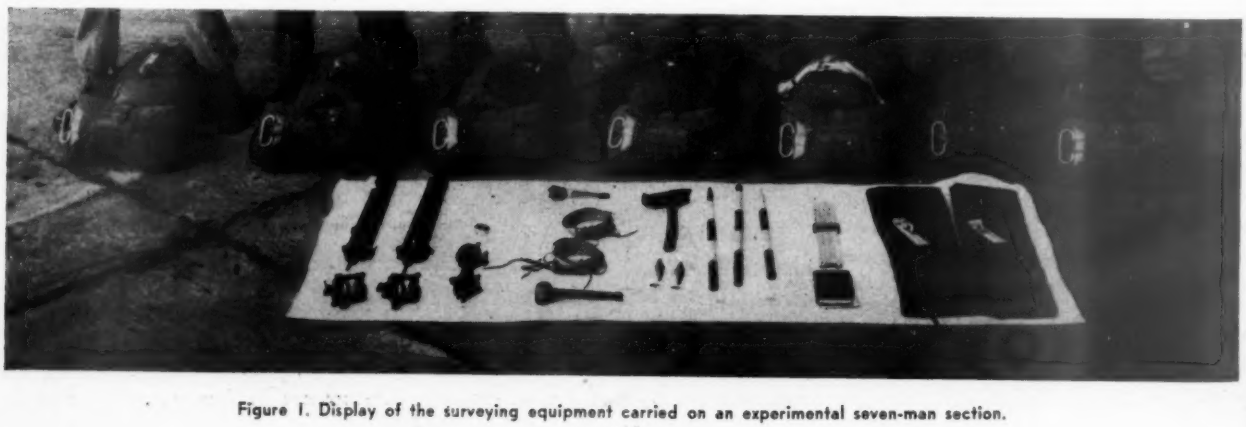


Figure 1. Display of the surveying equipment carried on an experimental seven-man section.

unusual individual; in most cases he is imaginative, individualistic and possesses initiative — qualities which make it almost imperative that each man be trained to handle any part of the survey. After all, a man who volunteers to leap from a plane isn't satisfied, after he lands, to act only as rodman. With this in mind, and because of the ever-present possibility that — at least in combat — some men may be missing after assembly, our training stresses all men being able to handle all jobs. In practice here at Fort Bragg, the Survey Officer works up a plan. Several possible initial points are picked from aerial maps or photos. Several possible direction lines are computed from maps or photos. All men are then briefed thoroughly on all phases of the plan and all information obtainable before the jump. After the air-landing, certain key personnel are declared casualties and the balance of the Section must assemble, find their way to one of the points and complete the survey. This challenge to each member of the section automatically builds up a high esprit de corps and each man takes an active interest in all phases of the problem.

Another way to build interest is the use of old FIELD ARTILLERY JOURNALS. One period each week is spent testing the short cuts and special twists which have been written up in past issues; if they prove to be accurate and simple enough we incorporate them in our SOP. Another way to increase interest is to encourage the men to suggest new methods of their own. We make it a practice to try them out, no matter how far-fetched they appear to be.

I might add here that we have not, as yet, found anything to surpass the standard survey methods and the basis of all training is the acquisition of the basic methods of survey by everyone. In view of our dependence upon the aiming circle, we require the greatest possible accuracy in angle reading and taping.

Figure 2. Airborne survey section ready to emplane.

DEMONSTRATION

A demonstration survey was recently conducted in conjunction with regular training, for all officers, key non-coms and new members of the Division Artillery. The demonstration was held at Blues Mountain at Fort Bragg and conducted by a battery of the 319th Field Artillery Battalion. The spectators followed the battery into rendezvous, were present with the battery commander at the position area and, via loudspeakers, heard him issue instructions to the personnel. They then assembled at the OP and heard and saw the survey plan formulated. Then from Blues Peak (which gave a good view of the entire problem) they saw the several different possibilities (survey) actually worked out on the ground. As the figures were obtained they were put on blackboards and all present worked out the survey individually. The demonstration concluded with a critique, during which the Division Artillery Commander, Brig. Gen. William N. Gillmore, pointed out the different survey plans which could have been used, the drawbacks and advantages of each.

POSSIBILITIES

Lord Wavell once said that for many years the British Army, before accepting any new piece of Ordnance, had it taken up on a high tower and dropped off, the theory being that above all else Ordnance must be able to survive a drop — a common occurrence in the mountains of the Punjab or the Transvaal.

Naturally the airborne soldier is prone to appraise his equipment from the standpoint of parachuting to earth from a plane. Lightness of weight and durability are two most desirable assets, especially in survey equipment. We have experimented with aiming circle legs made of scrap aluminum, for instance, and light-weight, telescope-type range poles. Eventually we will experiment in packing and dropping the transit (perhaps the one-minute mountain transit in lieu of our present twenty-second instrument). A desirable improvement (from our point of view) would be an aiming circle with telescoping legs, a built-in lighting device, and encased in a light-weight aluminum or fabric container; or, perhaps, an entirely new instrument, combining the best points of the transit and the aiming circle, small in size, for mil measurements and with a telescope which could be used for sighting on the stars for night orientation. Aiming stakes are relatively minor items but perhaps they could be made of a light-weight material, in telescope form. The tape is satisfactory until someone finally invents an unkinkable, unbreakable one.

* * *

It is difficult to think of a more challenging or satisfying type of work than that of airborne survey. To leap into roaring darkness from a plane . . . land . . . assemble . . . put together the instruments . . . find a predesignated spot on strange terrain . . . and thereby carry out a small but vital part of a great plan is as rewarding an experience as a man can know.

FIELD ARTILLERY SONG

(1936 Revision)

By Fairfax Downey

Republished, as was the original in our July-August issue eleven years ago, with an apologetic salute to the late Brig. Gen. E. L. Gruber, who wrote our immortal *Caissons* song.

Over hill, over dale, motorized from head to tail,
With the caissons and hosses all gone.
Stop to fix up a flat, or to get the captain's hat.
Motor trucks with the pieces hooked on.

Then it's high, high, see! The Field Artilleree!
Sound off your Klaxon loud and strong! SQUAWK!
SQUAWK!
No more we'll go, with a team in low,
If our motors keep buzzin' along.

See the red guidon stuck on the off side of a truck,
With the caissons and hosses all gone.
Gone are nose-bags and grass, as we feed with oil and gas
Motor trucks with the pieces hooked on.

Then it's high, high, see! The Field Artilleree! . . . etc.

By the roadside we stop for some hot dogs and some pop,
With the caissons and hosses all gone.
Now we halt after dark and at tourist camps we park.
Motor trucks with the pieces hooked on.

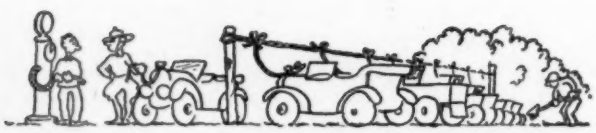
Then it's high, high, see! The Field Artilleree! . . . etc.

Hear the bold bugles blow (amplified by radio),
With the caissons and hosses all gone.
Shove 'er, guy, into high, as the green lights flicker by.
Motor trucks with the pieces hooked on.

Then it's high, high, see! The Field Artilleree! . . . etc.

If our engines go dead, won't our faces all get red!
With the caissons and hosses all gone.
For the foemen, of course, will yell at us, "Get a horse!"
Motor trucks with the pieces hooked on.

Then it's high, high, see! The Field Artilleree! . . . etc.



The "Seeing Eye" Fuze

By Frank A. Zupa

Bell Telephone Laboratories, N.Y.C.

Republished by courtesy of *Ordnance*

The optical proximity fuze—a device that can detect any target that crosses its path—is the perfect detonator since its activation is caused by any target lying within lethal range.

THE DEVELOPMENT OF THE optical proximity fuze is one of the successful instances of cooperation between the well-established industrial organizations and the new-born departments of the military in time of emergency.

It has been acknowledged that the proximity fuze ranks high among the many new devices which helped our fighting forces to gain complete victory. There are several types of proximity fuzes which were developed for both Army and Navy ordnance devices. One of these developments carried to successful completion and production was the optical proximity fuze for use on the 4½-inch rocket. This rocket, with its simple launching tube, was another valuable development representing, in effect, a 4½-inch recoilless gun weighing less than 100 pounds. The proximity type of fuze gave it deadly effectiveness heretofore unattainable.

The optical proximity fuze, as the name indicates, is a device which detonates an explosive charge in a projectile upon the reception of a light signal which is produced by the target itself as the projectile approaches it. The light signal is a small change in the amount of light entering the fuze lens, brought about by the sudden appearance of the target in the vicinity of the projectile.

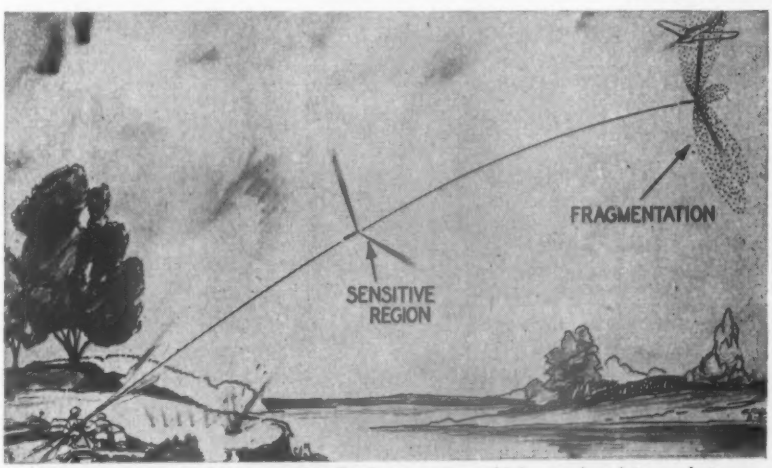
Theoretically, the proximity-type fuze is the perfect time fuze because the time at which it operates is designed to be automatically controlled by the target itself when the latter lies within the lethal range of the projectile. With the older types of fuzes, which are preset for their time of operation, comparatively small errors in the determination of the preset time or deviations which occur in the time mechanism itself may cause the projectile to explode too far from the target.

The need for accurate timing can be appreciated when it is realized that even a low-velocity projectile, such as a 4½-inch rocket, travels nearly 100 feet in only one-tenth of a second when it is approaching its target.

Basically, the optical fuze consists of a toroidal lens, a photocell, an amplifier, a battery, and a selective switch. The toroidal lens is an integral part of the conical nose cap, and it completely encloses the photocell unit. The photocell is mounted on a phenol-plastic base which is riveted to a die-cast amplifier housing and the conical nose cap screws onto the threaded shoulder of the base.

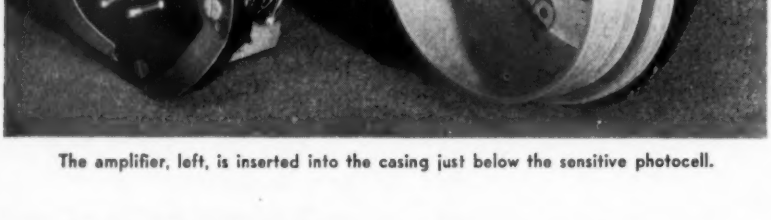
The amplifier assembly is held in place in the die-cast housing by means of screws. The battery and switch are two cylindrical units having the same diameter as that of the amplifier base. The amplifier and the switch plug into sockets on opposite ends of the battery unit.

A cylindrical cover encloses the switch and battery units and screws onto the die-cast housing. The housing, supporting the entire fuze assembly, screws into the front of the projectile, and the exposed surfaces of the nose cap and housing conform exactly to the ogive form of the projectile.



Use of the optical fuze is graphically shown as it would be employed in combat.

The amplifier, left, is inserted into the casing just below the sensitive photocell.



The base with its protruding photocell and the lens are shown before being mounted.

The impregnated wooden block, which houses the amplifier components, is filled with ductile wax in final assembly to provide a shockproof and moistureproof mounting.

The function of the basic components of the optical proximity fuze may be broadly described as follows: The toroidal lens collects light from transverse directions during the flight of the projectile and directs it through the annular transparent section of the photocell tube to the surface of the cathode within the photocell. The photocell transforms the light energy into electric energy which is then applied to the input side of the amplifier. The amplifier circuit, however, is arranged so that its output is nil until there is a sudden change in the amount of light entering the toroidal lens—a change produced by the sudden appearance of the target, relative to the projectile.

It must be realized that when the projectile approaches the target, the latter acts as a partial screen which reduces the amount of light falling upon the lens, and in turn, on the cathode of the photocell. The amplifier output then develops the voltage value which is necessary to operate a thyratron tube, which, in turn, starts the chain of action that ignites the explosive charge in the projectile.

To operate the fuze the change in the amount of light entering the lens need be but a very small percentage of the total light, regardless of the ambient light level of the day, from dawn to dusk. The switch unit is a robot which connects the battery to the amplifier circuit before the projectile approaches the target but after the projectile has been fired.

In order to meet the safety standards required by Army Ordnance, the switch unit is designed to function in a selective manner. As indicated above, it is arranged to complete the connections between the battery and the amplifier circuit only after the projectile has traveled a safe distance from its point of origin. Forces developed by the firing of the projectile are utilized for the operation of the switch. It is also arranged to withstand repeated shocks which may occur in the handling of the projectile without operating.

The fuze is also equipped with a self-destruction arrangement so that if the projectile should miss the target it will explode before reaching the ground.

Many experimental models and tests

on designs of optical proximity fuzes were made both in England and in the United States before the type here described was developed. The first models were much larger and heavier, and while they lacked the degree of sensitivity and reliability of operation which was required by Ordnance, the basic principles of the optical fuze were promising enough to warrant further development.

The National Defense Research Committee in Washington appraised the projectile as feasible and made arrangements for its development. In 1942 that committee assigned to the Bell Telephone Laboratories the task of developing for Army Ordnance a working design of the optical proximity fuze to fit on the 4½-inch rocket, especially for use against aircraft. A group of engineers at the National Bureau of Standards collaborated in the development work.

The specific aims set up in this project were to design a workable fuze assembly unit which fitted the ogive or nose end of the rocket and, most important of all, to make it capable of withstanding the forces due to acceleration associated with the launching of the rocket. On the basis of test results, these forces were specified as being 1,000 times those due to gravity. This means that when the projectile is fired, all fuze components and their mountings are acted upon by forces equal to 1,000 times their static weight.

Limitations were placed on the total weight and volume of the fuze in order to provide for the desired explosive charge and range of the projectile. The distribution of mass in the fuze had to be controlled so that the center of gravity of the assembly was very close to the longitudinal axis of the projectile. Since the fuze was required in large numbers it had to be suitable for rapid production and at low cost.

The test results on the early fuze models disclosed that there were design problems to be worked out for the production of a shockproof mounting of electronic tubes and other circuit components. There was no direct precedent in this type of work.

There was, however, a background of knowledge on materials and their processing to obtain dependable and long-life operation on apparatus used in communicating systems. These involved the processing of plastics, die castings, impregnating compounds, and electrical wiring. It was largely this background of knowledge that enabled the fuze assembly to be produced satisfactorily.

The toroidal lens is an integral part of the nose cap, the entire part being made of optically clear methyl methacrylate, commercially known as lucite. It was manufactured by injection molding to the final dimensions, and no polishing of the lens surface is required after the molding. The portions of the surfaces that had to be opaque to light were coated with a black finish by spraying. Close cooperation between the laboratories and the Western Electric Company was required to determine the correct molding time and temperature to produce this part to the required exact dimensions.

The production of an opaque surface on the nonlens portions presented some difficulties because a number of the common lacquers were found to be destructive to lucite, the destructive action being known as "crazing."

A similar difficulty was encountered in obtaining a waterproofing compound that had to be applied at the junction of the lens piece and housing to protect the photocell terminals from moisture.

The completely assembled fuze unit is ready to be used on a 4½-inch rocket.

In order to provide a shockproof mounting and a moistureproof assembly for the amplifier components, each component was individually mounted in a suitable hole in an impregnated wooden block and the housing was completely filled with a ductile wax. This type of mounting for the tubes, resistors, condensers, and wiring made it possible to obtain a stable and correct space relation between circuit elements, especially from the standpoint of avoiding excessive capicitance-coupling in the circuit.

The amplifier units were assembled on a straight-line assembly basis and their gain-frequency requirements were met without any serious difficulty.

The supply of electronic tubes was very limited owing to the large demands of other ordnance devices. For this reason tubes with various degrees of characteristics were accepted and were compensated for by matching with suitable grid bias resistors and by-pass condensers before these parts reached the assembly line.

Large quantities of the optical proximity fuzes, less battery and switch units, were manufactured by the Western Electric Company. A critical check inspection procedure was set up at the Bell Telephone Laboratories to observe the quality of the daily production.

Sample lots were checked for light-angle response, gain-frequency requirements, minimum microphonics, ability to withstand the 1,000-g acceleration, moisture, and extreme temperatures.

A suitable number out of each lot of fuzes from production were given field operation tests and laboratory inspection by Signal Corps engineers before each lot was approved for acceptance.

All these test procedures were justified because this type of device was not adjustable for operation and it also had to be safe for the personnel using it. It had to function satisfactorily only once and on the first operation.

The satisfactory results obtained in the acceptance-performance tests on the entire output from the Western Electric Company was gratifying evidence that another task had been accomplished.

The New Army Extension Courses

By

Col. A. E. Kastner, FA

The author, who was until most recently the Director of the Department of Extension Courses at The Artillery School, here presents most lucidly the evolution and scope and character of the splendid new Extension Courses.

See page 324 for a complete listing of the subcourses to be handled by The Artillery School.—Editor.

What credit toward promotion requirements do I get if I complete extension courses?

Will I really learn something from the courses or will I just be putting in time?

These questions among others are frequently asked at extension course conferences with members of the Reserve and National Guard refresher courses at The Artillery School. It is the purpose of this article to present the answers to questions regarding the new Army Extension Courses.

MISSION

The mission of the Extension Courses is to provide a progressive, nonresident course of military instruction for personnel of all components of the Army of the United States. Although Regular Army personnel are eligible to take these courses, they are designed primarily for the civilian components of the Army.

HISTORY

To appreciate the development and execution of the mission, a short resume of the background of the Extension Course programs is appropriate.

In 1922, the Army Extension Courses, known then as the Correspondence Courses, were established to further the military education of officers by providing for them a carefully planned, progressive, and extensive course of study. The Extension Courses were divided into four groups of subcourses, called the 10, 20, 30, and 40 series. These were intended for qualifications, respectively, for appointment as second lieutenant and for promotion to first lieutenant, captain, and major. For field officers the Command and General Staff School subcourses were available. Special texts were prepared for use with the subcourses.

In 1939, changes were prescribed in the subject matter of the series and in the texts used. The subject matter of the series was changed from promotion requirements to knowledge-in-grade requirements. For example, where formerly the subject matter of the 20 series was designed to qualify a second lieutenant for promotion to first lieutenant, it now furnished the knowledge required by a second lieutenant. War Department publications, rather than the special texts, were to be used. The revision of subcourses was proceeding when the war interrupted the program.

The work involved in Army Extension Courses has always consisted of two phases. The first phase is the preparation of all subcourse material, both lessons and instructional matter used with them. The second phase is the administration of the subcourses. This phase includes the enrollment of students, assignment of instructors, distribution of instruction material, and grading of papers.

During the period from 1922 until courses were discontinued in 1942, the Field Artillery School was concerned only with the first phase of the work—the preparation of material and texts. The administration of the courses was charged to Corps Area Commanders.

The disadvantages of this system were many.

Courses were not well coordinated because chiefs of arms and services selected and approved their own courses with little regard to similar courses conducted by other arms and services.

Courses were not perfected because schools had no way of validating the courses by a study of the results of administration and student reaction.

Grading was non-uniform and unreliable because it was not performed by instructors skilled in teaching the subject matter.

There was a considerable waste of printed material resulting from the necessity of maintaining stocks in Adjutant General depots, Corps Areas, Reserve Districts, and other subordinate locations.

In April 1946, the Army Extension Courses program was reestablished. Both the preparation and the administration of the subcourses are now accomplished at the service schools.

This system corrects the disadvantages of decentralized administration.

Supervision and coordination by Headquarters, Army Ground Forces, and the War Department avoids dupli-

cation and insures strict adherence to doctrine.

Courses are kept up to date as service schools are charged with that responsibility and, therefore, can discover errors while grading and administering the subcourses.

Uniform grading by specially qualified instructor personnel is assured.

Administration by service school avoids the possibility of favoritism and any suggestion of unfair practice.

Maximum economy results from the maintenance of only one stock of materials for each school.

Some appreciable reduction in personnel engaged in administration of extension courses is made because of centralization of grading and administrative functions at service schools.

After observation over a year of operation, The Artillery School believes that the administration of the courses at the School has established the courses on a firm basis and has resulted in an overall economy of effort.

The nature of the new system provides great flexibility toward expansion. The present courses have an enrollment now of about 20,000 with a forecast for the year of about 50,000. The majority of the civilian component officers in the postwar Army will receive military education through Extension Courses. The magnitude of the task is, therefore, readily apparent.

On April 15, 1947, the administration of the Extension Courses of The Artillery School and its branches—Antiaircraft and Guided Missiles, and Seacoast—was centered at The Artillery School. Courses are prepared at the Branch Schools and reviewed and approved by The Artillery School.

SCOPE

These new courses provide progressive military instruction, appropriate to the grade and military education of the student. The courses also parallel the resident instruction of the respective service schools. The 10 series is designed for basic military instruction, the 20 for second lieutenants, the 30 for first lieutenants, the 40 for captains, the 50 for majors and the 60 for lieutenant colonels.

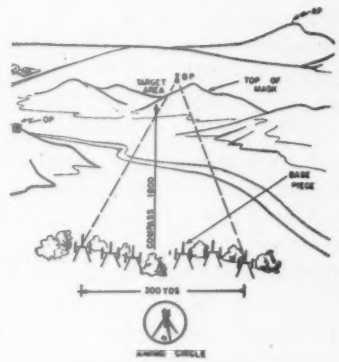
Command and General Staff College subcourses are integrated into the 50 and 60 series of subcourses of the service schools. The prospectus of the Extension Courses of The Artillery School is published on page 325 of this issue.

PREPARATION

The subjects and the scopes of the subcourses are recommended by the schools of the arms and services concerned. After their approval by Headquarters, Army Ground Forces, for the ground forces, and the War Department for the technical services, they are returned to the schools for preparation of the actual subcourses. A "preparation officer" is assigned to prepare and monitor a course from start to finish. Extreme care is used to insure that the course will have a genuine teaching value. Close liaison is maintained with all the academic departments resident at the School. All material must conform to approved doctrine, avoid duplication, be treated in a logical and progressive manner, and be presented in a simple and direct form. The selection of subjects is predicated on the basis of training the student for his specific wartime assignment rather than to give an all around familiarization. Approximately 75% of the material deals with matter appropriate to the grade of the student, while the other 25% is to fit him for his next higher grade.

Throughout the preparation the guiding principle is to design exercises which will require the student to use and apply principles, rather than perform mere memory or copy work. In general, objective type exercises—that is, multiple choice, true and false, or short answer type—are used. This not only saves time for the student and the grader, but also permits more subject matter to be covered than is otherwise possible. Many students felt that the teaching value of the old Extension Courses was not high. The student could merely turn the pages of the text until the answers to the questions appeared. The new Extension Courses avoid this fault by providing exercises which can be solved intelligently only if the student understands thoroughly the subject matter of the text.

When the "preparation officer" has completed his work, the subcourse is re-



SITUATION: You are the Executive, Battery A, 1st Field Artillery Battalion (105-mm Howitzer). The Battery, supporting an advance guard action, is approaching a position selected by the Battery Commander. (Position is represented diagrammatically in figure, above.)

REQUIREMENT

Wt.

5 **1.** You precede the Battery into the position and learn the direction of fire from the:
(Select the ***best*** one.)

a. Instrument operator.
b. Security sentinel.
c. Scout corporal.
d. Reconnaissance officer.

5 **2.** The general direction of fire was indicated to you as slightly south of east. You decide to lay the battery on *Y*-azimuth 1800 using the aiming circle. (See Fig. 11.) The declination constant of the aiming circle is 150. Therefore, the setting on the azimuth scale will be:
(Select the ***correct*** one.)

a. 1650
b. 1950
c. 4750
d. 4950

5 **3.** When the required setting is made, the compass needle is released, and the needle is centered using the lower motion (orienting knob). After this is accomplished the line of sight of the aiming circle is in the direction of:
(Select the ***correct*** one.)

a. Fire.
b. Magnetic north.
c. *Y*-north.
d. The base piece.

5 **4.** The object of the operation in exercise 3, above, is to place the 0-3200 line of the aiming circle in the direction of:
(Select the ***correct*** one.)

a. Fire.
b. Magnetic north.
c. *Y*-north.
d. The base piece.

The above is extracted from the Exercise section of Lesson 3 of Subcourse 20-12, Firing Battery.

viewed carefully for content, level of instruction, teaching value, and form. It is then checked for conformity to the latest doctrine, procedures, and techniques by the School's academic department charged with that type of instruction.

After the necessary changes and revisions, the subcourse is forwarded to Army Ground Forces for approval. When it is returned, comments and changes are incorporated, and it is then printed and made ready for distribution. Extracts from a typical lesson of a subcourse are shown on the preceding page.

ADMINISTRATION

The student who desires to enroll in a series of subcourses submits an application through channels. (See cut.)

An officer may require instruction in a particular subject only. In that event he should apply for enrollment in an appropriate subcourse without regard to series. If he desires, The Artillery School will select and furnish the proper subcourse.

After approval of the application, one or more lessons of a subcourse are sent the student. Certain subcourses use continuing situations in which one lesson is dependent on the solution of the preceding lesson. In such cases only one lesson is furnished at a time.

When the student has completed a lesson it is returned to the School for grading and processing. A rigid department policy requires that a lesson be processed, graded, and placed back in the mails within 24 hours of receipt.

ARMY EXTENSION COURSES

APPLICATION FOR ENROLLMENT

(To be submitted in triplicate)

LAST NAME—FIRST NAME—MIDDLE INITIAL	ARMY SERIAL NO.
CLARK, FORRESTER A.	0-265239
CITY, TOWN, OR POST OFFICE	STATE
Boston	Massachusetts
NUMBER AND STREET OR RURAL ROUTE (*If none, so state*)	
60 State Street	
TELEPHONE NO.	DATE
HUBbard 4000	11 April 1947

SUBJECT: Application for Enrollment in Army Extension Courses

TO: Senior State Instructor
Organized Reserve Corps
Section "F" West, Army Base, Boston 10, Massachusetts

1. REQUEST IS MADE FOR ENROLLMENT IN THE FOLLOWING ARMY EXTENSION COURSE		2. DATE OF BIRTH
ARM OR SERVICE: FA-RES	SERIES SUBCOURSES: 50	20 February 1906

3. MY PREVIOUS MILITARY EDUCATION HAS BEEN AS FOLLOWS (*State military training and experience in chronological order. Use additional sheets for statement if space provided is insufficient*):

Attended Harvard ROTC 1924 to 1929

Entered active duty as Captain 16 March 1942

ADC CG First Service Command, 16 March 1942 to 3 November 1942

Bn S-3 13th Armored Division Artillery, 3 November 1942 to 3 May 1943

Bn Exec 13th Armored Division Artillery, 3 May 1943 to 30 August 1943

OAC Field Artillery School, Fort Sill, Oklahoma, 1 September 1943 to 15 November 1943

Bn CO 13th Armored Division Artillery, 15 November 1943 to 23 December 1945

At present Bn CO 301st FA Bn 94th Division

4. IF A CIVILIAN, WARRANT OFFICER, OR ENLISTED MAN, INDICATE IN THE SPACE BELOW YOUR EDUCATIONAL QUALIFICATION. (*E. g., 1st, 2d, or 3d year high school, high school graduate, 1st, 2d, or 3d year college, college graduate*)

SIGNATURE: Forrester A. Clark

GRADE	BRANCH	ORGANIZATION	COMPONENT (*RA, NG, ORC, CIV*)
Lt Col	FA	301st FA Bn, 94th Div	ORC

WD AGO Form 145, 1 April 1946

All grading receives the personal attention of an officer specialist. This, usually, is an officer of field grade. It is in this stage that special techniques are necessary to create the desirable student-instructor relationship. If papers are machine processed and the student feels that he is simply a number, results will be comparatively poor. If, however, the student realizes that the instructor understands his problems and is endeavoring to help him as an individual, the results will be much more gratifying. The instructor not only marks an exercise as right or wrong, but also furnishes detailed comments to aid the student in comprehending the principles involved. The personal factor is emphasized to the greatest possible degree. There is, of course, a vast difference between merely grading a correspondence course paper and genuinely teaching by mail.

After the paper is graded and results recorded, it is returned to the student together with solution sheets. Numerical grades are recorded at the school and the appropriate word grade is marked on the paper on the usual basis of superior, excellent, satisfactory and unsatisfactory.

When all lessons have been graded the examination is mailed to the student. Fifty per cent of the average rating attained on the lessons plus fifty per cent of the rating on the examination constitutes the final rating. Upon the satisfactory completion of a subcourse the student is advised of the rating attained through the proper channels. When the student has completed a course series satisfactorily, a Certificate of Completion is furnished through channels. For National Guard students copies of this Certificate are furnished the Chief, National Guard Bureau, Washington, D. C., and the State or Territorial Adjutant General concerned. For Organized Reserve students, one copy is provided the unit instructor, who makes appropriate entries on the WDL AGO Form 66 of the student and files the copy in the student's field file 201.

Texts, maps, compasses, franked return envelopes and other materials are furnished the student, in general on a loan basis. Everything is done to remove administrative obstacles from his

path no matter how seemingly small. It is appreciated that while the student is doing extension course work, his primary concern is in earning a living and that his military studies represent time taken from his leisure activities.

After a subcourse is printed formally it is not regarded as final and unchangeable. Revisions necessary because of changes in doctrine and results of analysis of teaching value are immediate and continuous. The grading officers maintain a revision file on each subcourse to insure that all possible improvements are incorporated in revised printings.

EFFECTIVENESS AND CAPABILITIES

What is the effectiveness and what are the capabilities of Extension Courses in general? A recognition of their proven value has come only after a long and difficult period. In the early days, colleges and universities commenced correspondence teaching with considerable misgiving. After a reasonable trial, however, teaching by mail soon proved itself, and today it is universally accepted by leading educators as a very effective form of teaching. It is realized, of course, that we cannot produce well-trained officers by correspondence methods alone, and that there are certain subjects which cannot be taught by mail at all. However, it is clearly established that theoretical training must precede any practical application. The maneuver is an excellent form of practical training, but before it can be conducted each participant must know exactly what he is to do in that maneuver. Any one who has taken these courses or who has instructed with them can appreciate readily that most of the tactical and technical matters of military training are covered thoroughly by them and that the instruction they furnish encompasses a thorough background of military knowledge.

Extension Courses not only constitute an unusually effective method of teaching, they are also a very economical one. As an example, during one pre-war period $17,000 was spent on extension courses, whereas 2¼ millions of dollars, or 132 times that amount, was spent on the short summer camp training period for fewer students and covering much narrower fields.

The Army Extension Courses form the backbone of the inactive status training program for the civilian components. Here are some of their specific accomplishments:

They familiarize the student with virtually the entire scope of military subjects appropriate to his level, and thus provide him with a groundwork for active duty periods and for future training, ultimately fitting him for his wartime assignment.

They keep the student up to date with the newer trends and techniques, and maintain his interest in military matters.

They provide an opportunity for enlisted men in preparing themselves for Officers' Candidate School.

They provide an opportunity for officers to increase their knowledge of the higher grades and thus advance their individual careers.

The question of promotion credits naturally arises with respect to the courses. The post-war promotion policies have not yet become firm. Under present National Guard Regulations, completion of extension courses is not a prerequisite for promotion. However, the courses are of great value in aiding the student to acquire the military knowledge qualifications necessary for promotion. Regarding promotion in the Officers' Reserve Corps, regulations direct that full consideration will be given by the examining board for Extension Courses completed, for active duty performed and for inactive duty training.

SUMMARY

Viewing the Extension Course Program broadly certain factors are worthy of summary.

The Extension Courses are designed primarily to train the peace-time army for mobilization duties.

The preparation and administration of the courses is conducted by the schools of the appropriate arms and services, in a carefully supervised and coordinated program.

And, finally, the Extension Course Program will be a principal means of attacking a problem of great magnitude—that of training the many thousands of civilian component officers.

OF MORE THAN PASSING INTEREST

Substituted recently at West Point for the tradition-packed and intangibly stimulating *Master of the Sword* the uninteresting title *Director of Physical Education.*

Congratulations, belatedly, to V Corps Commander and onetime artilleryman, Maj Gen Stafford LeR. Irwin, whose appointment as a permanent Brigadier General in the RA was inadvertently omitted in a recent issue.

NG Recruiting Campaign. The President has directed that a nationwide National Guard recruiting campaign be conducted between 16 Sept (the anniversary of the entrance of the NG into Federal service in World War II, and proclaimed *National Guard Day*) and 16 Nov.

Lapsed Insurance. Disregarding sound advice from their Government and the best commercial insurance companies, three out of four onetime servicemen have lapsed their NSLI policies. Fortunately, almost any veteran may still reinstate his policy.

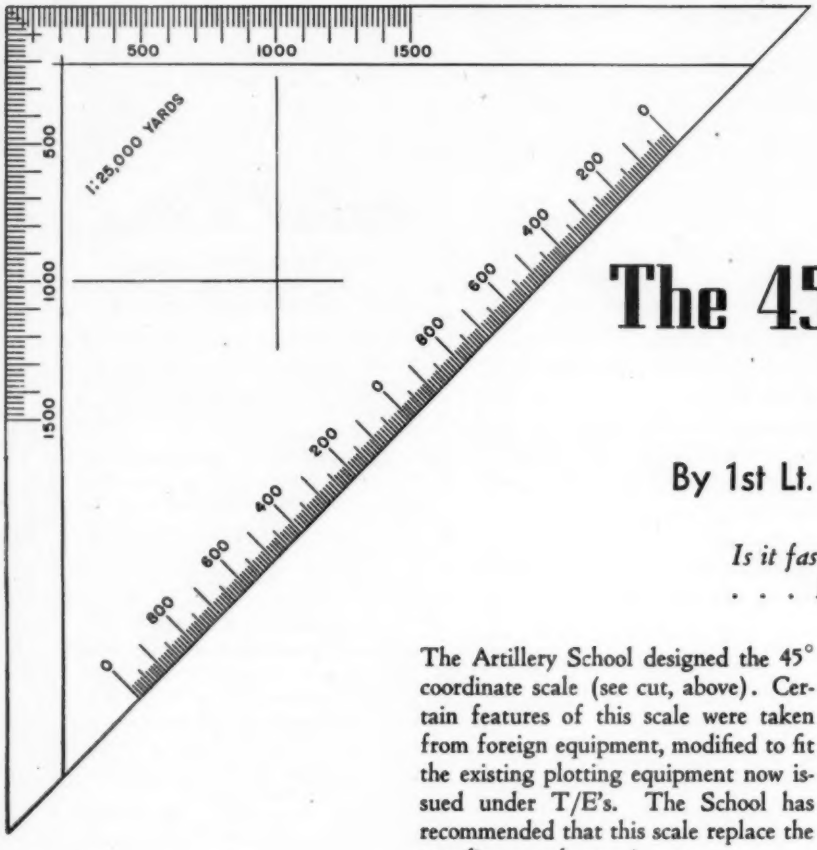
First ORC Class "A" Unit. Having met the personnel requirements, Hq and Hq Btry, 439th FA Group, located in Pittsburgh, is the first ORC unit to qualify for Class "A" designation.

Funds for EM of NG. Approximately $820,000 of what may eventually amount to a million dollars of funds turned in by inactivated NG units has been returned to the States and Hawaii for distribution to NG units.

Overseas Christmas Parcels. To insure timely arrival, Christmas parcels for Army personnel stationed overseas should be mailed between 15 Oct and 15 Nov.

Got Ideas? The Quartermaster General urges anyone in the Army, regardless of rank or station, who has a good idea concerning QM equipment, to write, either directly or through official channels, to the Chief, Research and Development Branch, OQMG.

Pre-enlistment Choice. Taking a tip from the AAF, the Army will offer high school graduates the opportunity, *before* enlistment, to select the technical training they desire.



The 45° Coordinate Scale

By 1st Lt. Blythe C. Triplett, FA

Is it faster? Is it more accurate? . . . Many believe that it is.

THE NEED for a more rapid and accurate method of plotting and measuring coordinates has long been felt in Fire Direction Centers. With the adoption of 1/25,000 equipment as standard, this need has been amplified.

Recognizing this fact, the Research Section of the Gunnery Department at The Artillery School designed the 45° coordinate scale (see cut, above). Certain features of this scale were taken from foreign equipment, modified to fit the existing plotting equipment now issued under T/E's. The School has recommended that this scale replace the coordinate scale now in use.

The triangular scale enables the user to plot and measure point locations with the accuracy of the *triangular boxwood alidade*. The 45° coordinate scale is a triangular piece of acetate made of the same material as the range deflection fan. The right angle of the triangle is graduated in yards, similar

Figure 1

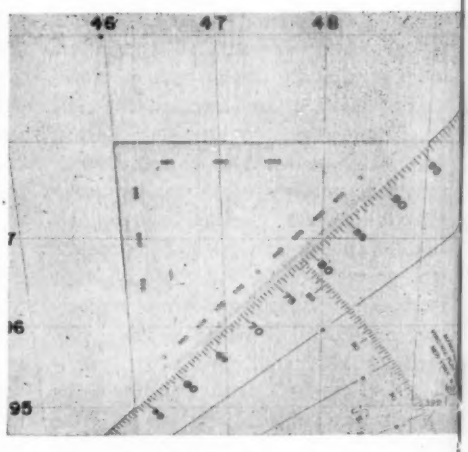
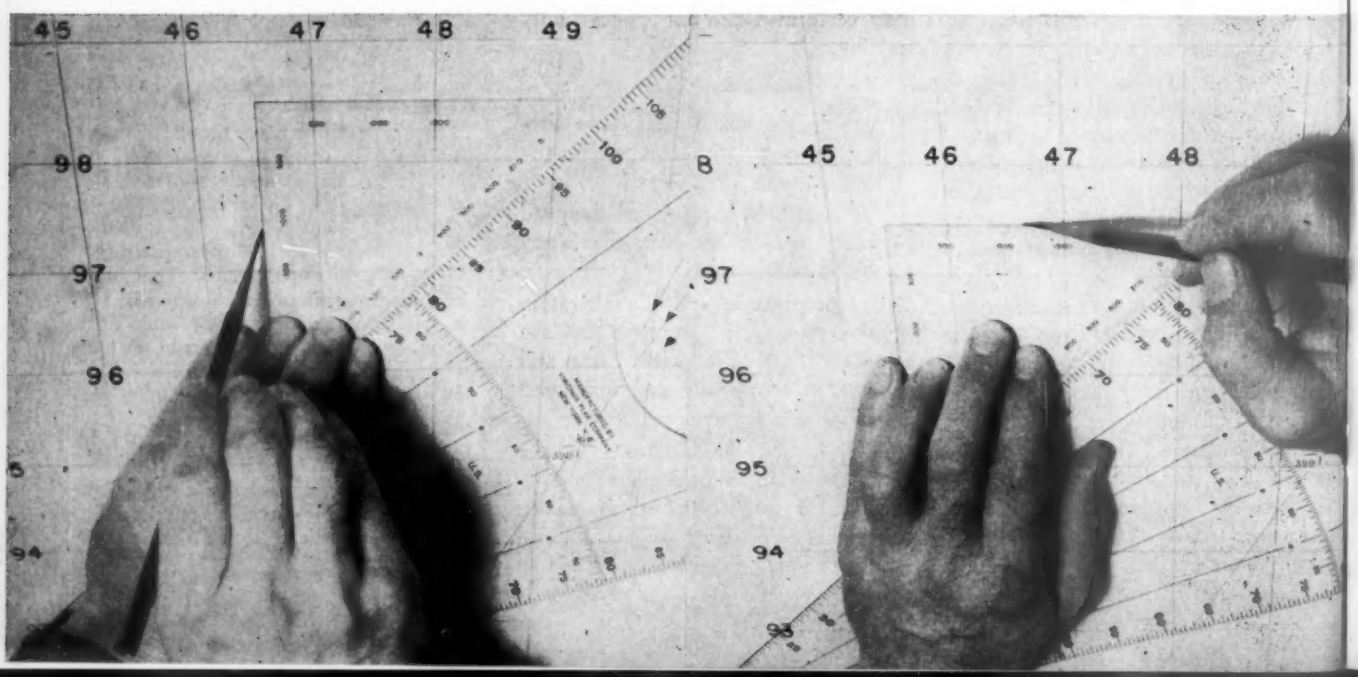


Figure 3

Figure 2



to the scale of the present coordinate square. The hypotenuse of the triangle has two scales on a 45° angle. The distance from 0 to 1000 on each scale is the diagonal distances across a grid square and is the square root of twice the square of the distance between the grid lines. These two scales are 1.414 times longer than the 1000 yard scales on the present standard coordinate scale. This added length permits graduations to 10 yards which in turn increases the accuracy of plotting and reading.

ORIENTING FOR PLOTTING

The correct way to orient the triangle to plot the coordinates of a point is shown in Figure 1. The orienting hairlines are placed directly over the grid intersection at the lower right corner of the grid square. The sides of the triangle are aligned along the grid lines at the left and top of the square. When the coordinate scale is oriented, slide an indexed or graduated straight edge against the hypotenuse of the triangle. Any graduation may be used as an index if a graduated straight edge is used. The index is placed opposite the center 0 on the scale. In Figure 1 the 75 on the fan is oriented opposite the 0 on the scale.

PLOTTING A POINT

To plot the point (846.520-1297.470), orient the triangle in the (846.000-1297.000) grid square. To plot the X coordinate, slide the triangle up and to the right along the straight edge until 520 is opposite the index. With a fine hard pencil draw a line along the left edge of the triangle. (See Figure 2.) To plot the Y coordinate, slide the triangle down and to the left until the 470 is opposite the index on the straight edge. Draw a line along the top of the triangle. (See Figure 3.) The intersection of the two lines will accurately locate the point on the chart.

MEASURING COORDINATES

To measure the coordinates of a point, orient the long hairlines that are parallel to and nearest the sides of the triangle over the grid lines to the left and at the top of the grid square. With the straight edge along the hypotenuse of the triangle, the index at 0 on the scale, slide the triangle along the straight edge until the hairline is directly over the point. Slide the triangle to the right to read the X coordinate and down and to the left to read the Y coordinate.

The scale may also be used in the same manner as the present standard scale. To measure coordinates by this method, place the scale so that one leg is on the appropriate X grid line and the hypotenuse is parallel to a line running from the lower left corner to the upper right hand corner of the map or map substitute. The coordinates are read as shown in Figure 4. This method is as fast as the standard scale and has the same accuracy. It is not recommended because the greater accuracy of the hypotenuse scales is not utilized.

PLOTTING FORWARD OBSERVERS' CORRECTIONS

To plot forward observer corrections, use the scale on the right angle of the triangle and plot, sliding the side of the triangle along the range deflection fan. Example: From Base Point go Left 600, Add 700. Figure 5 demonstrates this use.

MANY ADVANTAGES

In the development of any new piece of plotting equipment for the field artillery some of the considerations are:

1. Is it faster?
2. Is it more accurate?
3. Has it any other advantages over present equipment?
4. Does it add another piece of equipment or will it take the place of some piece of equipment now in use?

The user of the 45° coordinate scale can answer all of these points positively. It does speed up the accurate plotting and measuring of point locations. With its proper use the accuracy of the work will be improved to the quality of the triangular boxwood alidade. The 45° scale is *faster* than the alidade and because of the longer scales can be read *more* accurately. Of course, the hypotenuse scales are more than twice as accurate as the present standard coordinate scale. This statement is proven by the 10-yard graduations on the 45° scale and the greater ease of reading due to its length. In addition to these

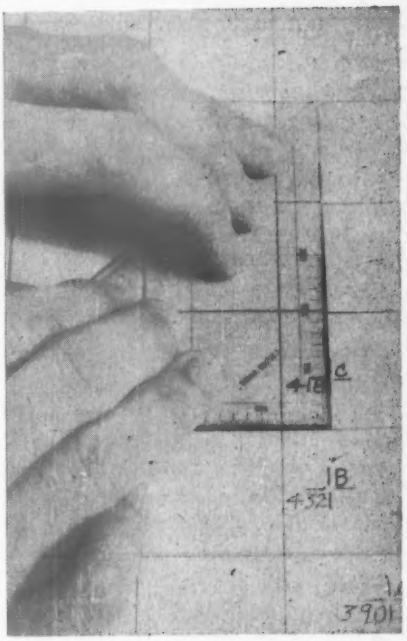
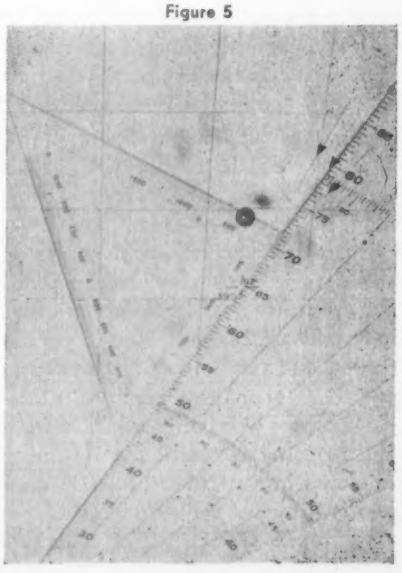


Figure 4

advantages in the field of accuracy and speed, the 45° scale is transparent. This is very helpful when plottitng on any chart which shows detail and also does not demand that the scale be moved off the chart when it is desired to study a target. Relative distances between a target being plotted and map detail is easily seen whereas this is sometimes impossible with the present opaque standard scale.

The 45° scale is not an extra piece of equipment, but can replace the present standard scale and do a better, more accurate job.

Figure 5



ARMOR *and* MOBILITY

By Col. Hayden A. Sears. Cav.

Republished by courtesy of *The Armored Cavalry Journal

ARMOR, to the modern combat soldier, quite simply means tanks and the supporting weapons of the other arms, both ground and air, that accompany these vehicles. Likewise, the term armored operations immediately evokes a mental image of tanks and their supporting elements formed into an armored combined arms team for the purpose of accomplishing a breakthrough or penetrating an enemy line to destroy vital rear installations and communications of the enemy (which it has been impossible for the air arm to totally nullify) by complete exploitation of the assets of firepower, mobility, and personnel protection embodied in such a team. The nucleus of the armored combined arms team is the tank, and in this, as in all other armored formations, additional organic weapons are assigned to roles in support of the tank effort.

It is apparent in any review of World War II that, in all theaters, on all types of strategic terrain, under a wide range of climatic conditions, and in varying types of operations (land, water, and air), armor not only played its part, but without it, conclusive successes were seldom achieved. Further consideration also reveals that in continental operations of major magnitude, strategic successes were never achieved without the powerful contribution of armor employed in a spearhead role. A comparison of the fluid techniques of the recent war with the static type of operation prevailing during World War I leads us to conclude that:

1. Armor restored the power of maneuver to the battlefield.
2. Armor prevented a stabilized war in trenches and fortifications.
3. Armor had a direct and compelling influence on the tactics and strategy employed by both sides.
4. Armor can operate on any type of strategic terrain.
5. Armored divisions are organized primarily for offensive action in hostile rear areas.
6. Armored successes are generally achieved after initial tank-supported operations have created the opportunity for exploitation.
7. Armored operations should be closely supported by other equally mobile troops.
8. Armor, *as such,* has earned its right to ground arm status and is here to stay.

The question now arises, what is the tank? Is it a mobile pillbox? Is it artillery? Is it an armored vehicle? Is it a combat vehicle? Obviously, the tank could not be defined as a mobile pillbox since it is capable of strategic movement; neither could it be classed as artillery because it closes with the enemy. The tank is an armored vehicle, but this designation is inconclusive since it is also a fighting or combat vehicle. Webster defines the tank as "a self-propelling engine of destruction, consisting of a casement of heavy armor plates mounted on a tractor and armed with guns or machine guns or both." From the strictly military point of view, the tank may be described as an armored vehicle designed to provide mobile firepower, as well as sufficient protection to personnel to permit engaging the enemy at close range as dictated by the tactical requirements of fluid warfare. Logically, the next question is, what is armor? We may explain that it is a collection of tanks supported by all other ground arms and services, the organization being designed primarily for offensive operations. It is contemplated that tanks

Artillerymen who have served with Armor need no introduction to the author, Colonel Hayden A. Sears. He has been intimately associated with the technical and tactical development and employment of Armor since 1938. His wide experience includes not only several tours of duty at Fort Knox but also extensive combat experience in Europe with the 17th Armored Group and the 4th Armored Division, where he commanded Combat Command A. He is now serving as the Director of Instruction at The Armored School.—Editor.

*March-April issue, 1947.

be used where they may be employed most effectively to win battles; armor shall be employed in the same fashion to win wars. To accomplish this, armor must be mobile if it is to be employed in strategic offensive operations and must possess the mobility of the troops it supports if it is to be employed on limited tactical missions.

Mobility is a quality second in importance only to the firepower potential of the armored combat vehicle, and is one which must be retained in these vehicles and their supporting weapons. Broadening of the powers of mobility through technological advancement is a future possibility. The ensuing paragraphs are concerned with the various aspects of mobility as it applies to armor in future concepts of warfare.

The possible means of transport for armor of the future are varied. Armored formations have been landborne and waterborne in the past, and future development is projected to make them airborne. The recent war was conducted and ended on a mobile scale never achieved in World War I, and there is no reason to presume that World War III—should it occur—would not begin on a scale of mobility at least equal and perhaps superior to that so recently achieved in World War II. Greater mobility with increased firepower is the goal for the future; any increase in armor protection to troops may become of secondary concern. With space being conquered by rocket or jet propulsion, and with trans-sonic and supersonic speeds being reached in the stratosphere, what is the future of armor when considered in terms of the mobility of tomorrow?

That the armored successes of World War II were generally achieved after initial tank-supported operations had created the opportunity for exploitation is a known fact. The initial question then in the matter of mobility becomes, how shall initial operations be supported with tanks? How these successes shall be exploited with armor, which has so thoroughly demonstrated its ability as the ideal modern arm of mobility to perform such missions, immediately follows.

Land and waterborne operations, using tanks in a supporting role, have been accomplished successfully. There is every reason to suppose that with the advance of technological development, armored airborne operations may be made practicable and the facility of waterborne operations increased. World War II precipitated the development of various ship-to-shore methods of transporting armored vehicles and the development of special amphibian fighting vehicles. These speculative amphibious ideas culminated in the successful waterborne invasions of Italy and France, and the island-hopping operations in the Pacific. There is no reason to presume that their counterparts, using air as an operating medium, will not be achieved in the somewhat unpredictable future.

Modern developments contemplate infantry coming under proximity fuzes, and the trend of personnel transport development is toward the fully armored carrier and the discard of the lighter open types of the last war. This trend projects an increase in load weights. This increase in weight requires increased lift if the operation is to be airborne, and therefore the infantry and tank problems in future operations will become more closely related. The matter of buoyancy pertaining to armored combat vehicles, having been more nearly solved in previous amphibious operations, poses no new consideration for armored personnel carriers to be employed in future amphibious operation, but does demand development with a view to increasing the mobility and maneuverability of the vehicles and vessels involved, and consequently the tempo of such operations. In airborne operations embracing the transport of armored vehicles for both combat and transport, however, lift is the controlling factor. Without lift, neither armor nor its supporting troops will remain truly mobile as that term may imply tomorrow. Armor of the future may be forced to be relatively light in weight if the full advantages of available airlift are to be realized.

The basic principles of warfare remain unchanged. Tactics of the battlefield will change with improvement in weapons, employment of higher order explosives in these weapons, and improved technique on the part of immediate tactical commanders in the handling of weapons so as to produce maximum devastation. Since it is an accepted principle that battle successes are achieved as the result of concentration as opposed to dissipation, emphasis must again be placed on mobility to enable rapid and decisive concentrations to be made, and equally rapid closing with the enemy to be effected. This rapid closing may well become a most vital consideration in warfare of the future. An equally rapid dispersion sufficient to guarantee maximum protection, but not so great as to imperil security within the area achieved, must be executed after success has been attained. Armor of the future must possess superior tactical as well as superior strategic mobility.

Experiences of World War II demonstrated that it was practical to establish beachheads using armor support and to bring armored formations into those beachheads to break out and exploit. By the same token, it is feasible to envision vertical invasions and the establishment of airheads containing supporting armor; the introduction of armored formations into these airheads would follow for the same purposes as those in beachhead operations. This cannot occur today and might be incapable of accomplishment tomorrow; however, it is a possibility of the future which cannot be overlooked.

Modern organization also appears to envision increased mobility. The armored division has been given an additional combat command. This provides another tactical headquarters equal in all respects to the two already existing and should further facilitate the conduct of mobile operations. The proposed infantry division has been provided with the equivalent of two tank battalions and contains a reconnaissance company as organic armor. In addition, it will eventually possess artillery of the identical self-propelled types found in the armored division, and armored personnel carriers in sufficient numbers to transport a combat team. This makes it possible for the division commander in fluid warfare to exploit his situation immediately without waiting for the addition of armor, inasmuch as the equivalent of a combat command of identical capabilities with those of the armored

division can be organized from his own organic units. The trend in the ground divisions is toward increased mobility combined with armor protection. These changes will obviously tend to prevent stabilization in foxholes, trenches, and fortifications, and will enable the infantry division of the future to engage in a more mobile and fluid type of warfare than has hitherto been possible. These potentialities indicate that it will be necessary for all infantry of tomorrow to be trained in the mobile techniques of the armored infantry of today if the full advantage of the new capabilities is to be realized. Commanders of the future must possess that vision which will enable them to perceive their possibilities and be prepared to exploit their capabilities through the full use of surprise achieved through mobility, properly followed up.

Current developments are leading to a much more mobile type of thought. Flights in the sub-arctic are taking place daily across the North Atlantic and in the northern reaches of America, Europe, and Asia. During the summer months the waters bordering on the northern coasts of these continents are open to waterborne operations. Flights across the top of the world, while not commonplace, are no novelty and have clearly demonstrated that the shortest routes of travel between the industrial sections of both continents lie via these arctic routes and are capable of accomplishment. That such flights cannot be made round-trip is apparent, for the fuel consumption involved is in excess of the capacity of all but the largest planes, and but few, if any, with such capabilities now exist.

An over-all plan envisioning the use of identical armored formations for all the mobile purposes heretofore explored is, of course, impracticable. Just as we weighted our successful combat formations in accordance with the immediate existing situations by reducing or increasing our percentage of armor, so perhaps in the future must we vary the composition of our armored formations by combination of different weights of armored vehicles according to their capabilities in the areas of contemplated employment, as well as according to the means of transport available to carry them to their destination in the proposed theater of operations. While it is desirable and may ultimately be practicable to manufacture one family of armored vehicles for all types of operations, the attainment of such an objective is not as yet a foreseeable fact capable of accomplishment with the means currently or immediately projected. Such development for which a demand may eventually exist, while possibly desirable, would be laborious. It should be approached from many angles. To narrow the development field to one type might well mean the exclusion of many others with admirable features. Armor must have its various types of combat vehicles, both in its principal echelons and in its supporting elements, for the day of a universal armored fighting vehicle has not yet arrived.

Despite the implications of new atomic age developments which pointed toward greater emphasis on mechanical instruments of war and less emphasis on the human element involved, it is well to remember that wars will continue to be fought by men. It is interesting to note that no less an eminent scientist than Dr. Vannevar Bush, who made numerous contributions to the war effort as Director of the Office of Scientific Research and Development, stated before a House Committee on Postwar Military Policy, "Wars are fought by men. The fighting strength of this country rests on many factors. It rests especially upon the men in the ranks, upon their ruggedness of body and mind, upon their fighting spirit, upon their belief in their cause as they come to define it." Here we find acknowledgment of the basic principle that wars are won by the men on the ground, and a discount of the 100% automatic robot idea.

It is armor that restored mobility to military land operations and prevented stabilization in the war just past. It is armor and its armored auxiliaries that, with increased and possibly three-dimensional mobility, will prevent the stagnation of situations in the future and challenge the current tactical and strategical concepts of the employment of ground forces on a global basis.

MAILING LIST — THE ARTILLERY SCHOOL

The Artillery School has re-established the mailing list. Material included will be selected instruction memorandums, pamphlets, problems and map exercises, lesson plans and instructor notes used at The Artillery School. The mailing list will be operated through the Book Department. Due to rigid post-war economy in budget allowances for printing it will not be possible to make free distribution. The Book Department will distribute to subscribers a catalog of material with prices. Individuals and organizations will comprise the subscribers.

Initially a package system will be employed. For example, package No. 1 will include material applicable to the battery, package No. 2 material applicable to the battalion, and package No. 3 material applicable to group (regiment), division artillery, and corps artillery. Additional packages by specialist subjects such as Communication, Observation, Materiel, and Motors will be made up. The first catalog will list only packages with descriptive lists of contents of each package. Later separate items in desired numbers will be offered.

Catalogs will be mailed with order blanks about 1 October 1947 to known addresses. Any individual or organization who does not receive a catalog by 1 November 1947 and desires to be placed on the mailing list should address The Book Department, The Artillery School, Fort Sill, Oklahoma. It is regrettably emphasized that charges must be made for this material by the Book Department. However, prices will be held to the minimum to cover cost of printing and mailing.

Artillery Integration

A statement to artillerymen from the Commanding General of the Army Ground Forces.

IT has been brought to my attention that many officers of the Coast Artillery and the Field Artillery are not familiar with steps being taken to form a single artillery arm. I am taking this opportunity to outline the current situation relative to the integration of the two artillery branches.

As early as a year ago it became generally known throughout the Army that the War Department favored combining the Coast Artillery and the Field Artillery into a single arm. Plans for proposed legislation to effect integration were prepared by the War Department, but were not presented during the last session because other items had higher priority. It is anticipated that legislation to accomplish the integration of the Coast Artillery and the Field Artillery will be sought as early as it is practicable to do so.

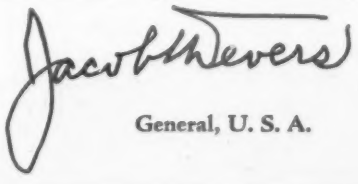
In the meantime, I have taken certain preliminary steps in anticipation of legislative approval of integration of the artilleries. These included the redesignation of the Field Artillery School at Fort Sill as "The Artillery School," with an Antiaircraft and Guided Missile Branch at Fort Bliss, Texas, and a Seacoast Branch at Fort Scott, California. Instruction at The Artillery School in both the basic and advanced courses has been altered to include all types of artillery weapons. Similarly, the ROTC program has been revised and a common artillery course will be taught beginning in the fall of 1947.

During 1946 the War Department Seacoast Armament Board made a survey of harbor defenses and installations. As a result, some harbor defenses were entirely eliminated, and obsolete weapons in others were declared surplus. Only certain types of modern fixed guns and submarine mines were recommended for retention. Units of the civilian components assigned to armament declared surplus were recommended for reassignment to mobile artillery designed to fire at moving or fixed targets.

Officers assigned to the Coast Artillery Corps or to the Field Artillery are considered first to be Ground Force officers, second artillery officers. Newly commissioned officers of the Regular Army assigned to either artillery branch receive the same basic course. They will serve in antiaircraft, field or seacoast artillery units and will attend the same advanced course. It is considered impractical within the time available to them for officers of the civilian components to receive basic training in all artillery weapons. However, the associate advanced course is designed to give field officers a well rounded knowledge of field, antiaircraft, and seacoast artillery employment. It will provide a valuable foundation for officers in command and staff positions requiring a knowledge of the employment and capabilities of the various artillery weapons.

Regular officers who through age or length of service would not normally take the regular advanced course present a different problem. The associate advanced course is open for such officers and they are urged to apply for it. In addition, consideration is being given to the establishment of short indoctrination courses which will give the Field Artillery officer a working knowledge of antiaircraft, seacoast artillery, and guided missiles and the Coast Artillery officer a corresponding knowledge of field artillery.

It is my intention that, first, the future artillery officer have a general knowledge of all artillery weapons and a specialized knowledge of some; second, the integrated artillery be a closely knit component of the Army Ground Forces team; third, neither of the present branches be absorbed by the other; and last, every artillery officer, regardless of present or future assignment, have an opportunity for advancement equal to that of any other artillery officer.



General, U. S. A.

Test Yourself

Quiz on the Conduct of Observed Fire

(*A solution and discussion of this quiz will be found on page* 311.)

1. The OT range is 3000. The first ranging round lands 57 mils left and the second lands 23 mils right of the OT line. What is your S factor?
2. Continuing exercise 1, would you use range or deflection bracketing procedure?
3. Continuing exercise 2, as the OT range increases in the same general direction, would you expect your S factor to increase or decrease?
4. What fuze is normally used when firing ranging rounds?
5. OT range is 3000. The first ranging round lands 27 mils right of the target and is doubtful for range. The second round lands line over the target. What is your next correction?
6. In area fire if the observer fails to designate a type of ammunition and the method of fire, what will the FDC give him?
7. OT range is 2500; S is 30; guns are on the right. The first volley is line short of the target. You send the correction "R120, ADD 400." The second volley lands 16 mils left of the target. What is the correct S factor?
8. The OT range is 4000. The ranging rounds burst 80 mils apart. What S and *d* factors will you use?
9. Continuing exercise 8, assume you determined an S of 100 and a *d* of 20. The guns are on the right. The first volley is line short of the target. You send the correction "R400, ADD 400." The second volley lands 40 mils right of the target. A correction of "REPEAT DEFLECTION, ADD 200," gives you a deflection over. What is your next correction?
10. OT range is 6000, S is 20; guns are on the left. You are firing a precision registration. The first round in fire for effect lands line short of the target. What is your next correction?
11. Continuing exercise 10, what deflection shift will give you a deflection correct?
12. You have just sensed a volley and given the correction "L160, ADD 400." You realize that you should have given "L80, ADD 400." What do you send to the FDC?
13. You are firing a time registration. The first round is sensed *graze*. What correction will you make?
14. Continuing exercise 13, when will you go into fire for effect?
15. You are firing an area time fire mission. The first volley is sensed *graze, over*. What height of burst correction will you make?

The 80th Congress and the Army

Being so easy to do, it is quite usual for soldiers to clear the Army's slate of troubles by pointing an accusing finger at Capitol Hill.

This "privilege" the 80th Congress took from us!

Albeit the regrettable holding-over of vital UMT legislation (the shortage of bodies in the Army, incidentally, was assuming critical proportions as this issue went to press) and certain other highly desirable bills, the 80th Congress did a great job, generally, for national defense. And the Army cannot complain at the treatment it received.

Difficult, even under the best of circumstances, our governmental processes become maddeningly awkward when—as is the case at present—the President and the Congressional leadership are not political bedfellows. Thus, it is most reassuring that the Congress managed to translate into law its obvious awareness of our Nation's inescapable responsibilities and commitments in this trouble-torn and still power-conscious world.

We now know, under the National Security Act of 1947, the broad shape and way of our future defense establishment. We now have a splendid new promotion bill, the primary features of which are outlined in the accompanying article. And, certainly, in the matter of appropriations—the life's blood of every executive establishment—the Congress dealt generously with the Army, by virtually matching the President's budget recommendations.

All in all, it is encouraging to realize that the "hangover" period of frustrated disquietude that has plagued the Army and all its soldiers since war's end appears at long last to be drawing to a close.

In general, the Congress has marked the way, and well.

Now, it's up to the Army.—Editor.

New Promotion Bill*

"May the Army be augmented
Promotion be less slow
May our country in the hour of need
Be ready for the foe . . ."

From: BENNY HAVENS (1838)

THE OFFICER PERSONNEL Act of 1947 was the result of many months of research and study on the part of a group of officers representing the General Staff, the Army Air Forces, the Army Ground Forces, The Surgeon General and The Adjutant General. Drafts of the plan were sent to the chiefs of each of the arms and services for comment and recommendation, special claims and pleas of every category of officer were carefully considered, and the finished product was studied in detail by both the Secretary of War and General Eisenhower. The result is a promotion plan which will meet the objectives of a good promotion system and also correct the weaknesses of the former law by:

1. Providing at all times an adequate number of officers to meet requirements in all grades. This is accomplished by: (a) a separate promotion list for the Air Corps so that its needs can be met by promotion of its own officers; and (b) authorization of a specified number of officers in each grade and for promotion to fill that specified number of grades and keep them filled.

2. Providing officers with an attractive career and assuring that outstanding officers can advance to higher

*Staff prepared, this article is drawn directly from the statements of Brig. Gen. John E. Dalquist (President, WD Promotion Planning Board) before the Armed Forces Committee of the House of Representatives. Space limitations required condensing some sections and the omission of certain portions of General Dalquist's discussion which were of limited, rather than general, interest.—Ed.

grades, in that: (a) promotion will be by selection for all grades above first lieutenant; (b) there will be steady and definite forced attrition in the grades of general officer, colonel and lieutenant colonel to insure a flow of promotion; and (c) the maximum time in grade is lowered to 7 years for promotion to captain, 14 years to major, and 21 years to lieutenant colonel.

3. Keeping the entire Officer Corps vitalized and keen, with officers not good enough to go up eliminated from the active list when they fail of selection two consecutive times.

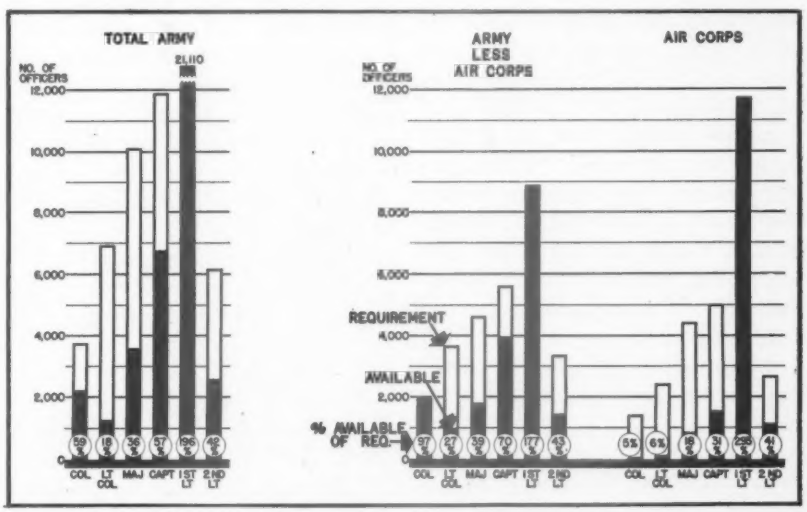
4. Assuring all officers of the same long-range promotion opportunities.

The bill has been drawn up as a complete personnel act to cover the entire career of an officer including appointment, promotion, and forced elimination. Instead of amending items scattered throughout the National Defense Act, a new comprehensive statement of law is provided with repeal of all laws in conflict. The cost of the bill will be small, and there is no immediate additional cost whatsoever.

INITIAL APPOINTMENT

To provide flexibility, officers will hereafter be appointed without specification of arm or service. They will either be appointed as Air Corps officers or as Army officers. Doctors, dentists, veterinarians and chaplains will be appointed in those branches because they are each appointed for that specific type of duty and that alone. Assignment of officers to various branches of the Army will be made by the Secretary of War according to the officer's training and qualifications and the needs of the service. The present branch structure is retained, but the War Department has authority to adjust the sizes of the several branches from time to time as circumstances dictate.

Active duty credit. The new law, furthermore, simplifies the language covering original appointments. The two most important changes pertain to credit for active federal commissioned service and to constructive service for those appointed in the professional branches. Heretofore, an officer appointed in the Regular Army came in as a second lieutenant, if commissioned in a promotion-list branch, or as first lieutenant, if commissioned in the Medical Department or as a Chaplain, and went to the bottom of the appropriate list, regardless of how much active federal commissioned service he may have had as a reserve officer. For example, a Thomason Act officer who had served a year as a reserve officer on active duty, when appointed in the Regular Army, lost credit for that year's service; some Air Corps reserve officers lost 2, 3, or even more years' service when appointed. The new law provides that officers appointed in the Regular Army after 1 January 1948 will receive credit, when appointed, for active federal commissioned service performed prior to that date and will be placed on the promotion list in accordance with such service. Thus if a reserve officer has been on active duty for two years, when he receives his appointment in the Regular Army, he will be placed on the promotion list as though he had been in the Regular Army for two years. This provision will avoid recurring age humps and will be a great incentive to reserve officers on active duty.



This chart, which shows the availability of officers versus requirements as of 1 July 1948, highlights one of the many stubborn problems confronting the War Department Promotion Planning Board.

Constructive service. Instead of commissioning all doctors, dentists, veterinarians and chaplains simply as first lieutenants and putting them on a promotion schedule different from that of the rest of the Army, the new law gives the officers appointed in these branches constructive service at time of appointment equal to the extra time, beyond that required for a bachelor's degree, needed to obtain their medical or seminary education. This constructive service counts in determining the rank at appointment and for promotion thereafter. Thereafter, their promotion schedules will be the same as for the Army and Air Corps. Under this system, doctors are given 4 years' constructive service which will place them among first lieutenants with one year's service in that grade. Dentists, chaplains and lawyers are given 3 years' constructive service, which will place them with first lieutenants just promoted to that grade. Veterinarians are given constructive service of 2 years which will place them among second lieutenants with 2 years' service in that grade. Heretofore, when vacancies in the Judge Advocate's Department could not be filled by transfer or detail of officers from other branches, reserve judge advocates up to 36 years old were commissioned as captains. The Judge Advocate General and the Secretary of War both desire to recruit such men as are needed from civil life, from outstanding young graduates of law schools rather than from lawyers who have been in practice from 8 to 14 years. They both feel that lowering the requirements as to age and rank will result in the recruitment of more promising men. This system of constructive service gives full credit for the additional education required; it puts all officers in the same grades at same av-

erage ages; and insures all officers the same general opportunity for promotion.

LISTS AND GRADES

The present promotion single list for the Army is retained. It has worked remarkably well and has been a big factor in obviating the old branch jealousies which existed prior to World War I. A separate promotion list was set up for the Air Corps, separate promotion lists were also provided for doctors, dentists, veterinarians, chaplains, and medical service corps. These officers are restricted in their duties, are all recruited from civil life, and cannot be assigned to other branches. The promotion system, discussed below, applies equally to all of these promotion lists.

The former law prescribed the number of general officers of the line, the number of chiefs and assistant chiefs of branches who hold the rank of general officer while occupying those positions, and set up an indeterminate number of general officer positions for the GHQ Air Force and its wings. It also set a specific number for colonels of the promotion list but no limitation was set on the number of colonels in the Medical Department. In addition, as many temporary colonels of the Air Corps could be appointed as the War Department decided was necessary. No numbers were prescribed for any other grades. This system, or rather lack of system, led to a number of anomalous situations such as having 54% of all officers in one corps of the Medical Department in the grade of colonel, but for the line of the Army having only 28% of our requirements in grade of lieutenant colonel and 32% of requirements in grade of major. Under the former law officers of the combatant army could be permanent generals, but officers of services could only reach the grade of temporary general officers, and only while serving as a chief or assistant chief of their service.

To correct the foregoing, the new bill sets the strength in each grade by specifying for each grade a percentage of total authorized Regular Army officer strength in each grade. The percentages set up are: three-quarters of one percent for general officers — this will include all generals, those now called line generals and those now called staff generals; of the remainder of the officers—eight percent may be colonels, fourteen percent lieutenant colonels, nineteen percent majors, twenty-three percent captains, and thirty-six percent lieutenants. These percentages were arrived at after a study of job requirements, attrition factors, and desirable promotion schedules. In the upper grades, they correspond closely to present peace-time percentages.

PROMOTION

The most important changes are in the methods of promotion. Second lieutenants will be promoted upon completion of three years' service, and the new Act retains the provision that all commissions are probationary for three years. The commissions of second lieutenants not fully qualified for promotion will be revoked and the officers discharged. It is believed that men not suited for a military career should be separated as early as possible.

Promotions to each grade above that of first lieutenant will be made as vacancies occur, but only those officers recommended for promotion by selection boards composed of senior officers will be promoted. There will be no automatic promotion. Officers eligible for promotion will be considered by selection boards and those recommended for promotion will go up, as vacancies occur, in the order of their seniority. To select officers for promotion to each grade below colonel, the selection board will start with the senior officer of the next lower grade, consider his record, and either recommend him for promotion or pass him over and then consider the next officer, and so on. The number of officers recommened for promotion each year will be sufficient to fill anticipated vacancies the following year. Recommended officers, after nomination by the President and confirmation by the Senate, will be promoted when the vacancies occur. Those not recommended will be considered as passed over and will remain in grade.

To avoid stagnation or undue forced elimination, every officer will be eligible for promotion regardless of vacancies; to the grade of captain on completion of 7 years' service; to major on completion of 14 years' service and to lieutenant colonel on completion of 21 years' service. Depending upon attrition and the distribution of officers after the present integration of World War II veterans is completed, this provision may eventually cause a temporary excess in each grade. However, because of the peace-time jobs of Regular Army officers such as furnishing War Department overhead, research and development, instructors with civilian components and at schools, an excess in numbers in those grades can be employed.

To control the numbers in these grades and prevent the overflow from becoming excessive, the bill authorizes the Secretary of War, in his discretion, to use another method of selection. He can list for consideration a definite number of officers and direct selection boards to recommend a lesser number for promotion. Those selected will be the officers, who, in the opinion of the board, are considered to be the best qualified for promotion. The maximum number which can be listed for consideration may not exceed the number to be recommended by more than 20%. Any officer listed for consideration and not recommended for promotion will be deemed to have failed of selection. Officers in the grades of first lieutenant, captain, and major who fail of selection to the next higher grade by two consecutive selection boards under either selection system will be separated from the active list. The amount of attrition from the first system—that is, selecting officers fully qualified without a specific number to select from—cannot be calculated and will vary greatly from time to time and in each grade. Under the second system the amount of attrition can be closely controlled. The maximum possible will be 11% of a series of groups up for consideration.

The above described methods cover promotion to include the grade of lieutenant colonel. Promotion to the grade of colonel, brigadier general, and major general will also be by selection. The numbers in these grades, however, will always be limited, and promotions can be made only to fill vacancies. To permit outstanding officers to reach the

highest grades early in their careers, officers who have completed one year's service in the permanent grade of lieutenant colonel (normally about 22 years' service) may be listed for consideration for selection. Every officer senior to the junior officer listed for such consideration must be considered. Until 30 June 1948, officers of grades below lieutenant colonel who have served as general officers may also be listed for consideration. The number of officers to be considered for promotion each year will be as directed by the Secretary of War. The average amount of service of officers named for consideration will vary from year to year. Right now, because of the World War I hump, there are a great many lieutenant colonels with more than 28 years' service. In about three or four years, it is estimated that in the Army Promotion List the bulk of officers selected for promotion will have about 25 years' service. In the Air Corps Promotion List, because of the great scarcity of officers of long service for some time to come, officers will be promoted to colonel at a much earlier age.

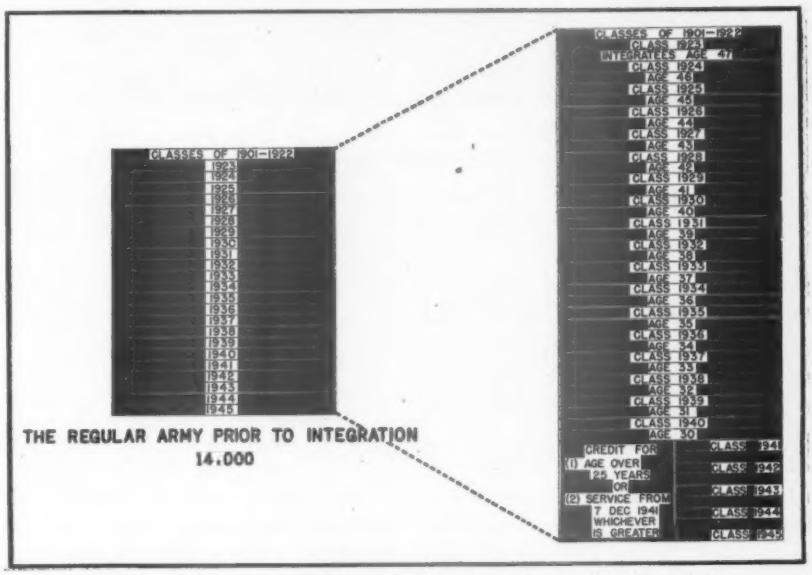
To be eligible for consideration to each of the general officer grades, officers must have completed one year's service in the next lower permanent grade. Until 30 June 1948, however, officers below the permanent grade of colonel or brigadier general who have served as temporary general officers may be listed for consideration. To assure an adequate distribution of officers of requisite experience in the several arms and services, the Secretary of War will each year specify, when necessary, the minimum number of vacancies in each of the three higher grades which must be filled by officers having specific types of experience.

FORCED ELIMINATION

The separation of officers of junior grades who fail of selection for promotion has already been covered. Lieutenant colonels not recommended for promotion will be retired on completion of 28 years' service. Colonels and brigadier generals who complete 5 years in that permanent grade and 30 years' service and have not been recommended for promotion will be retired. Major generals who complete 5 years' service in that permanent grade and 35 years' service and are not occupying a higher temporary grade may be retired. Regardless of time in grade, colonels and brigadier generals will be retired upon reaching 60 years of age and major generals upon reaching 62 years of age. These provisions differ sharply from the former law, which required retirement at age 60 for colonels and lieutenant colonels, 62 years for brigadier generals and 64 years for major generals. After World War I many colonels spent from 10-22 years in that grade without obtaining a promotion but blocking all officers behind them. The mandatory retirement of approximately 20% per year in each of the three higher grades, under the new law, will insure a healthy flow of promotion and keep the active list alive and vital. It will assure the junior officer an opportunity to reach the top.

To permit the new mandatory retirement provisions to be adopted without too violent an impact and to avoid an inequity against the members of World War I hump, the mandatory retirement of lieutenant colonels and colonels will not become effective until 1953. In the meantime, to permit the annual 20% attrition to become effective gradually, the Secretary of War may retire any officer who has completed 30 years' service. This authority is to be used when the number of officers with more than 30 years' service is excessive; the officers to be retired to be those recommended for such retirement by a board of general officers.

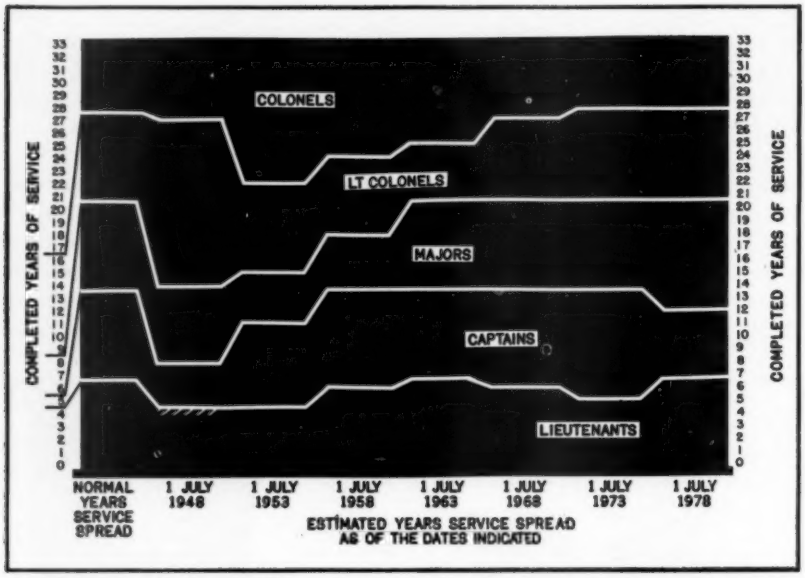
The emoluments of officers separated from active service have been coordinated with existing and proposed retirement provisions. Officers who have less than 20 years' service at time of separation will receive a separation allowance of 2 month's pay per year of service but not to exceed two years' pay. Officers with 20 years or more service, will be retired, with retired pay computed at 2½% per year of service but not to exceed 75%.



Wartime officers are integrated into the Army according to the above chart.

TRANSITORY PERIOD

To insure an orderly transition from the present promotion system to the new one the following provisions are included: the new system of selection for general officers and colonels became effective immediately upon the enactment of the law, and the new selection procedures are now being implemented for these grades. For the other grades, however, the new system will not become effective until June 30, 1948, in order to permit the completion of the present integration program. Officers are now being integrated in the grades of lieutenant to major inclusive. These officers must be assured an equal chance for



Of great personal interest to thousands of officers is this chart, which is the estimated years' service spread required to fill minimum Army promotion list grade requirements.

promotion, with the officers now in the Regular Army, to fill the grades created by the increase in the Army. The integration program will be completed by 31 December 1947. Up to that time promotions under the present system will continue. Promotion will then be suspended until selections have been made to fill the initial requirements in the permanent grades of captain through lieutenant colonel which it is expected can be completed by 30 June 1948.

The increase in the Army created a great many vacancies in these grades. Promotion to fill these initial vacancies will be by selection. In making these selections, the War Department feels that every advantage should be taken of the fact that our present Regular officers, including those now being integrated, have been through the most rigorous possible test, that of actual war. Therefore, in filling the initial vacancies, no limit is placed on the number of officers who may be listed for consideration. This will permit selected officers to be advanced a great many files. However, those not selected in these initial promotions will not be deemed to have failed of selection for purpose of forced elimination. The reason for these two provisions is to permit the early promotion of officers with outstanding war records without prejudicing eligibility for later promotion under the permanent provisions of the law of qualified officers not so selected.

TEMPORARY PROMOTIONS

The foregoing discussion has dealt with permanent grade promotions of the Regular Army. The bill also continues the authority of existing temporary law for temporary grades. There are two situations under which this authority will be exercised. Under this bill the Secretary of War, in his discretion, may set the number of officers in each grade under permanent appointments in the Regular Army at a lesser figure than the total authorized. When the number of officers holding permanent appointments in any grade is less than the authorized number, the difference may be filled by temporary appointment of qualified officers. This provision was inserted particularly to take care of the present situation in the Air Corps. Because of its tremendous expansion an exceedingly small proportion of their Regular officers have over 15 years' service. The Commanding General of the Army Air Forces considers it undesirable to promote permanently to high grade officers with only 7 or 8 years' service. It is felt that a better procedure will be to restrict for the time being the numbers in permanent grade, filling the remaining requirements by temporary promotion. Young officers thus temporarily appointed in these higher grades who do not continue to measure up to the responsibility of such grades may then be reduced without difficulty and remain in a lower grade until they have gotten more experience. The necessity for this will disappear as the present top Air Corps officers get more service and experience.

The second reason for temporary grades is to provide a proper officer structure for the total interim Army on active duty. The authorized number of Regular Army officers has been set well within and below the number required for the Army and Air Force. During the period we occupy Germany, Japan, and Korea the total required officers will exceed 100,000. Even after occupation duties are completed the total officer requirement for the Army and the Air Force together will probably exceed 80,000. The War Department requested the smaller figure of 50,000 regular officers which was authorized by the last Congress for two reasons: first, to permit easy reduction of the military establishment as our commitments decrease; second, to produce annually a large group of experienced young officers for the National Guard and Reserve Corps by using a considerable number of such officers on extended active duty for limited periods.

To make up the difference between the number of colonels, lieutenant colonels, majors and captains, resulting from permanent promotion within the 50,000 regular Officer Corps and the number needed in these grades for the larger interim Army, temporary grades will be resorted to. The number in temporary grades will depend upon requirements and will decrease as the Army decreases in size and as certain extraordinary responsibilities such as Military Government, Contract Termination, and Property Disposal are completed or transferred to other agencies. Percentages in these grades required for the interim Army will be lower than the percentages in these grades required for the smaller Regular Army. For example, for the next fiscal year the estimated percentage of general officers will be 4/10 of one percent of the active officer strength contrasted with ¾ of one percent of regular army officer strength in these grades, and the percentage of

colonels will be 4.4 percent of the estimated active duty officer strength compared to 8 percent colonels for the Regular Army strength. In numbers this means that for the next fiscal year it is estimated that the Army, Air Force, and Medical Department will need 5,600 colonels as compared with 4,000 authorized for the eventual regular officer corps of approximately 50,000.

The law provides that temporary promotions shall be made from among all officers on active duty, regular and reserve, on a fair and equitable basis, regard being given to seniority, age, and selection based upon ability and efficiency. During the war, with an officer corps of more than 800,000 scattered all over the world and under the urgent pressure of combat, temporary promotion was of necessity decentralized to commanders in the field. With a much smaller number of officers on active duty and with more stable conditions the War Department plans to centralize temporary promotions and make them by selection to assure all officers on active duty, regardless of location or component, an equal opportunity.

Actually in the upper grades and particularly in some of the promotion lists there will be continuing demotion from temporary grades rather than promotion. In the past year approximately 100 temporary general officers and 5,000 colonels were either demoted or relieved from active duty, and something over 1,000 colonels were recently reduced or relieved from active duty.

As the active duty officer strength decreases the need for temporary grades will decrease and under the bill the authority for temporary grades will not exist when the active duty officer strength has gone down to the authorized regular officer strength. The War Department believes it is much more desirable to fill requirements in grades by temporary appointments rather than by permanent appointments because of the authority to revoke temporary grades as needed and the flexibility and control the procedure affords.

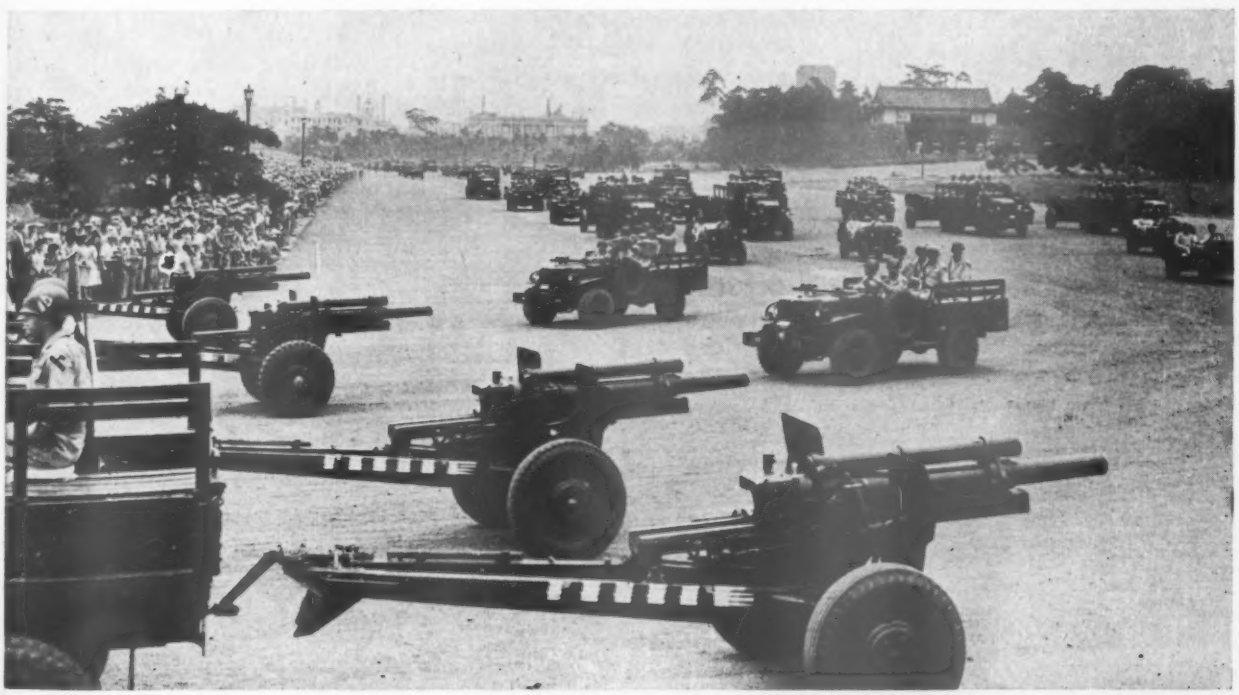
The actual length of time that temporary promotion will be needed cannot now be determined exactly because of our still unstable condition. The best estimate is that it will be necessary at least until our occupation duties have been completed.

SUMMARY

The Officer Personnel Act of 1947 was drawn up with a view to giving the modern post-war Army, a modern post-war promotion system. Its main features are:

1. The application of selection to all grades above that of first lieutenant.
2. A flexible grade structure to permit the most economical use of the great number of splendid combat-tested officers of World War II just recently integrated.
3. Elimination from the active list of ineffective officers as early as possible and definite and even turnover in the three higher grades to insure a flow of promotion and increased opportunity for all officers.

Those who worked on the preparation of this Act feel confident that it is a workable and sensible approach to the problem of promotion; that it gives Army and Air Force officers a fine career, as good as that in any other service; and, that it can be administered so that morale of the Officer Corps will remain high.



The 1st Cavalry Division Artillery rolls past the reviewing stand during the 4th of July parade in Tokyo for General of the Army Douglas MacArthur. On the same day, Battery C of the 99th Field Artillery Battalion gave General MacArthur a 19-gun salute—the first such salute, it is reported, ever to be given by the U. S. Army to any general.

Dollar Famine

Dear Editor:

I regret that I must discontinue forthwith my subscription to THE FIELD ARTILLERY JOURNAL. The serious dollar crisis now confronting my country is such that I do not feel justified in incurring even this modest dollar expenditure.

BRIGADIER ———

York, England

—Pending alleviation of the continuing world-wide famine in dollar exchange, American officers in foreign parts are urged to share their JOURNALS and when practicable to help our foreign friends procure, by private arrangements between themselves, the necessary dollar exchange to maintain their JOURNAL subscriptions.—Ed.

FO Training

Dear Editor:

After finishing OCS I was assigned to, and went overseas with the 102nd Inf Div as a forward observer. The first time I went forward I carried all the necessary equipment of a FA, which is entirely too much. I carried a map board (a nice juicy clue for the Jerry sniper), field glasses, and of course my crew carried our radio. We were attacking fortified positions across an open beet field about midday, near Linnich. When we came within rifle range of the pillboxes and bunkers, we were the first ones fired upon. Everytime we tried to raise our radio aerial, we were shot at again.

I am of the opinion that the FO and his crew must either be a part of the infantry regiment, or they should have special training in infantry tactics. A lot of our FO's were killed or wounded just on this account. They would come to our outfit, fresh from the States, and be sent on up to the front with no other training than what they had received at Sill, where they had weeks of precision firing and absolutely no infantry training. So, I say, let's train them as infantrymen, and then give them as much FO instruction as possible. Why, I knew infantrymen who became excellent FO's after firing surprisingly few missions.

CAPT. C. S. JASPER, FA-Res.

Des Arc, Ark.

Where There's a Will, . . .

Dear Editor:

I am a Navy man attached to the Marines, though I assure you I would like very much to be in the Army. If eligible, I'd like to subscribe to THE FIELD ARTILLERY JOURNAL.

CPHM ———, USN.

—Welcome.—Ed.

Plans Prepared

Dear Editor:

I have constructed several small models of the Artillery School terrain board (see cuts, below) for use in conduct of fire instruction here at the Gunfire Support School. They can be readily moved from place to place and make an excellent terrain aid for all artillery components of the Army.

I am prepared to send the plans and constructional notes to anyone desiring them.

MAJOR MAX MORRIS, FA

Gunfire Support School

NavPhiBase

Little Creek, Va.

Missed

Dear Editor:

I have watched with interest the lists published in the JOURNAL of Field Artillerymen who reached general officer rank. To date, however, I have missed the name of Brigadier General Francis Hill, USMA '33, who went to CBI Theater with General Stilwell. He was assistant G-3 of CBI, then G-3 of CBI and later of India Burma Theater.

LT. COL. R. J. O'DONNELL, FA

Philadelphia, Pa.

—The omission is regretted.—Ed.

Fellowship and Tradition

Dear Editor:

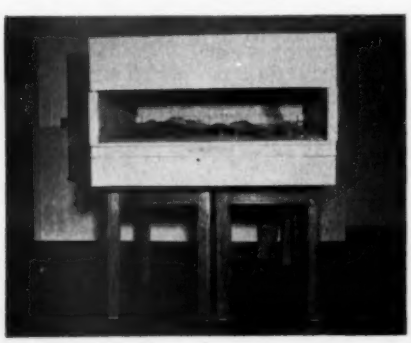
There are at present at Fort Sheridan several men who at one time served in the 2nd Battalion of the Third Field Artillery, one of the oldest Regiments in the United States Army.

With a view to keeping alive the spirit of good fellowship and traditions of this old and honored Regiment, it has been suggested that an Association be formed to be named *"The Third Field Artillery Association."*

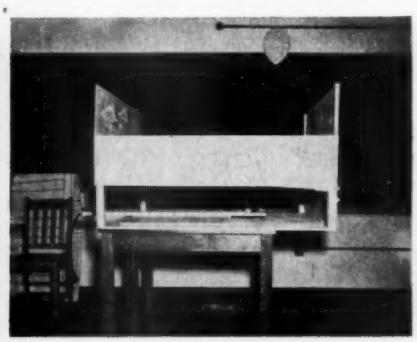
I shall be pleased to hear from any old "Third Field" members, who may be interested in further information concerning this undertaking.

M/SGT. ALLAN HALE

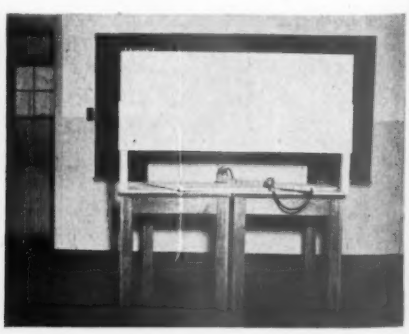
Fort Sheridan, Ill.



Front view.



Side view.



Rear view.

Solution and Discussion to the Test Yourself Quiz on page 303

1. S = 80. The observed deviation is 240 yards (by mil relation). For deviations over 200 yards but less than 275 yards, use an S of 80.
2. Deflection-bracketing. It is used when the observed deviation between ranging rounds is greater than 200 yards.
3. Decrease. The S factor varies directly with the target offset.
4. Fuze quick unless the observer requests otherwise.
5. "L80, REPEAT RANGE." S is determined to be 20 (27 x ¾). Corrections are made from the first ranging round. However, a sensing on the second ranging round should be used subsequently.
6. Fuze quick, area volley fire. These elements are prearranged in order to cut down the initial fire message.
7. 40. You should have moved R160 (R120 + R40) to get a line shot with a 400 yard range change. 160 ÷ 4 = 40.
8. S = 100, *d* = 20. With an observed deviation of 275 to 325 yards, use an S of 100. 80 mils ÷ 4 = 20 mils, the *d* factor.
9. "L200, DROP 300." It is necessary to make a range change of 600 yards to get a line shot with a 4-S deflection shift. Therefore for each 100 yard deflection shift a 150 yard range change is required.
10. "L10, REPEAT RANGE." Move ½-S or 10 yards (whichever is greater) until a deflection bracket is obtained.
11. 5 yards. For ranges under 10,000 (20,000) yards deflection is correct when (a) a 10 (20) yard deflection bracket is split, (b) a target hit is obtained, (c) deflection *overs* and *shorts* are obtained at the same deflection setting.
12. "CORRECTION, L80, ADD 400." To correct the initial fire message, only the element in error must be given correctly. In subsequent corrections, the entire correction must be given.
13. "REPEAT DEFLECTION, MINUS 8, REPEAT RANGE." An .8 second change is normally made if the first burst is a graze.
14. Go into fire for effect when a .4 second time bracket is split. This corresponds to a 2 fork (50 yard) shift in a precision registration.
15. "UP 40." A 40 yard change in height of burst is normally made if the first volley is a graze.

SOMETHING HAPPENING AT SKROMPTSK

(*Continued from page 279*)

so this gave Burke a full five additional days to complete his action on them.

Burke studied the basic communication, which ran as follows:

Subject: Unusual Activity at Skromptsk.
To: Commanding General, Warning Defense Command.

1. Supplementing reports received from our agents at Skovra, Soong Koo, Djubrskov and Chang Hao, dated 7 January 1966, it is reported that further activity of a similar nature has been observed at Skromptsk.

2. From attached log sheets (Inclosure #1) it will be seen that numerous new inhabitants have arrived at that town and that they are not identified as members of the Fur Trading Post, workers in the coal mines or officials of the local "Political Exiles Enlightenment Project." These persons have alternated in visits to the railroad spur, and to localities along the north coast which have not been reported as previously visited.

3. Based upon the shortage of observers assigned to this area, and the failure of ten of them to return from their last mission, it is recommened that not less than twenty-five (25) additional men be dispatched to this area without delay.

The letter was signed by the Chief of a Division of Intelligence Agents, had been flown to San Francisco in a diplomatic pouch, and had spent two weeks passing through other Headquarters acquiring three indorsements, each inviting attention to the basic communication.

"By Jove, Miss Williams!" Burke exclaimed, "This looks hot! Something is happening at Skromptsk!"

Miss Williams looked over his shoulder for a moment, then shrugged.

"That goes on all the time," she said.

"But our fellows are disappearing ten at a time, probably chained, half naked, in some coal mine——"

"You ought to see the reports that were coming in last fall from the Angstruk area; I'm cleared for handling such correspondence, and I read them all. Unusual activity? Humph! The Arctic circle must be hung three deep; but nothing ever came of it."

"But we ought to do something about it. Shouldn't we get a TWX off to Washington on this right away?"

"TWX's don't get off right away," she informed him listlessly. "You better buck it to General Kommer."

"I think I'll go *see* him."

"You have to get permission from Colonel Records. He's out to lunch; maybe he'll be back this afternoon. But it's Friday, you know; even if you got in to see General Kommer you couldn't get the draft of your action approved today. Nobody'll be here on Saturday or Sunday but the Section O.D. Why not wait till Monday?"

"On the other hand, why not try to get something done today? This might be——"

"It wouldn't go out today, anyway."

"But men are dying——"

"Better just buck it up to Gen. Kommer. Give it to me, I'll fix it."

But Burke had read about Paul Revere's ride. He took the papers to Colonel Records.

"Something happening at Skromptsk, eh Burke?" the Colonel said. "Let me see. Hm . . . railway . . . new places on the coast . . . more characters congregating in town . . . more of our agents being bumped off. Something happening at Skromptsk, all right. I'll tell you; we'll forward it. Fix me up a draft; never mind putting it through Parks, he'll see it on the way out; get it to me some time Monday; something like this . . . er . . . let's see . . . er . . . reference is made to par. 4b, or whatever it is, of that memorandum we got last week on policy for replacing agents. Miss Williams will find you a copy. Then go on to say this Headquarters concurs, et cetera and so forth . . . more agents. By the way, what are you doing tonight? My daughter's giving a party."

DO IT MONDAY!

Burke took the papers back and began on a draft. In the midst of his first sentence, Miss Williams interrupted to say "Here's a snowflake that's due Monday. We better get it out today in draft form if we expect to get the final approved before quitting time Monday."

"What's it about?"

"It requires you to tabulate the ratings for a new T/O after adding one

each to the technicians in Grades 3, 4 and 5 and explaining them in remarks."

"A routine matter; let it go. We've got to get this draft on Skromptsk——"

"You've got four days left on the Skromptsk snowflake. You could do it Monday."

"The Colonel wanted it in his hands Monday——"

"If he said Monday, he meant *any time* Monday. It wouldn't go out before Tuesday anyhow."

"O.K., give me that paper on the T/O. It won't take me but a few minutes, and then I'll go back to the Skromptsk affair."

"Ha! Ha!" snickered Miss Williams. "This is your first T/O. When you get good at it, you'll turn them out in three hours. You have to include all those figures in parentheses, check the totals both ways—probably you better take it home with you over the week end."

"What I really should do is take the Skromptsk papers home . . . ."

"You can't do that; they're confidential. You have to turn them back in to Miss Wiggs to put in the Section safe by four-fifteen, you know."

"So I do. I forgot. Give me the T/O papers."

Burke slaved over the T/O figures, the inclusive totals and the aggregate totals for four hours. Then he was called into a branch conference which lasted until four o'clock. At four-thirty Miss Williams was scooting for the elevator, Burke was still trying to reconcile totals, and Miss Wiggs was standing over him tapping her foot.

"Because you didn't turn in snowflake 67548372 at four-fifteen, I miss the first elevator, and have to stand up on the bus going home tonight!" she snarled.

"Oh, I'm sorry," Burke answered soothingly. "We'll ride home in a taxi. Now, what is this snowflake 6754 — I forget the rest?"

"Skromptsk," she told him. "Gimme. All *confidential* papers have to . . . ."

"I know, go in the safe over the week end. I'm sorry. Here they are. I'll wait for you at the elevator."

MONDAY COMES

The Skromptsk papers lay in perfect safety in the safe of the G-2 Section over the week end. At Skromptsk, in the early afternoon twilight and far into the night, forty flat cars were unloading tarpaulin-covered vehicles down a ramp, and four curious foreigners were being shot for looking inside the paulins.

Monday came and with it Lieutenant Colonel Burke. Not Miss Williams; she had phoned Miss Wiggs that she was not feeling well. Miss Wiggs was used to charging one day of annual leave up to Miss Williams on cold Monday mornings.

Burke got the Skromptsk correspondence from the safe and drafted an indorsement in pencil. Unable to get any promises from the stenographer in the neighboring office, he punched the draft laboriously out on the typewriter and took it with the other papers to Colonel Records' office. It being confidential, he was not permitted to leave it in the Colonel's basket, so he had to wait until noon when the Colonel returned from a conference.

"The Skromptsk papers? Oh, yes. I'll take them." Colonel Records reached for the papers and locked them in his drawer.

Burke returned to his office and found the "In" basket full of papers with snowflakes attached to them. Ignoring them, he finished the T/O tabulation and gave it to the stenographer next door to type.

At four-thirty, Miss Wiggs stood over Burke's desk, tapping her foot.

"Snowflake 67548372," she droned in exasperation, "was due back in my office for safekeeping fifteen minutes ago."

"Oh, the Skromptsk papers? Colonel Records has them."

"Probably he's gone home. Somebody'll have to write an explanation to the Chief of Staff on this. *Confidential* papers have to be back in the safe every . . ."

"O.K., Miss Wiggs. May I have the pleasure of your company for the ride home in a taxi?"

TUESDAY, TOO

Tuesday morning Burke found the Skromptsk papers in his basket with pencil corrections on the draft. Colonel Records had lined out the word "about" and put "approximately"; the words "We concur in the recommendation contained in par. 3, basic communication," had been changed to read "The recommendation contained in par. 3 basic communication is concurred in at this Headquarters." The words "Inviting attention to" had been changed to read "Attention is invited to."

Miss Williams arrived, surprisingly gay for one who had languished all the previous day upon a bed of pain, and undertook to make a new draft that was much neater than Burke's, and she reminded him that it must go to the G-1 Section for somebody's initials because the matter of personnel was included in the text of the reply. The draft went to G-1 and to the head of the Chief of the Reports Branch for initials, but due to Lieutenant Colonel Burke's persistence in violating Office Memorandum No. 1 by handcarrying it and bidding for preferential treatment at each stop along its route, the paper was again back in the hands of Colonel Records by noon. The latter approved the draft but wanted to show it to General Kommer.

Burke returned to find Miss Wiggs holding the overdue snowflake on the T/O over his head menacingly. The untyped figures on the T/O were rescued from the stenographer next door and Miss Williams went to work on them.

"You better apply for an extension on the snowflake on that Skromptsk correspondence," Miss Williams advised. The final is due tomorrow, and you probably won't even get the draft back from Gen. Kommer by that time."

"How do I apply?" asked Burke helplessly.

"Fill out Form 1165. It goes to General Kommer.

"Well, if Gen. Kommer has the papers, he knows why we can't get them out on time. So why write *him* a letter?"

"It says so in Office Memorandum No. 1, 1 January 1966."

—•—

ACROSS the world in Skromptsk it was Wednesday. An American plane flying over the area was shot down near the town and some excellent vertical photographs of significant black objects and tracks in the snow

were taken from its camera. The United States Department of State explained that the pilot had lost his way on a flight from Seattle to Nome, Alaska, and received a polite reply stating that the identity of the plane had been mistaken and expressing regret at the death of the crew.

HURRY-UP AND WAIT

Burke got the draft back "approved" on Wednesday, and handed it to Miss Williams to type the final letter

"It's half-past three," she complained. "It won't go out tonight."

Burke was beginning to get his feet on the ground.

"Miss Williams," he barked, "I don't care if it's midnight and Christmas, you type that letter right now, understand?"

Miss Williams pouted and strode out, but after a good cry in the rest room, she returned and typed the letter. But she was right; it didn't go out. General Kommer didn't get around to initialing the final letter, so Burke had to turn it back to Miss Wiggs for safekeeping until the next day.

Actually the letter went to the Adjutant General's Section on Thursday, six days after Burke had first seen it, eleven days after it had arrived in the Headquarters. Let us follow its progress from this point. A sergeant-major stamped the name of an Assistant Adjutant General at the bottom of the text and laid it in this officer's "In" basket; the Assistant Adjutant General found it there a few hours later and signed it, putting it in his "Out" basket; there it lay overnight, but in the morning a messenger girl picked it up with a load of other papers, carrying it directly to the message center (with a ten-minute halt for refreshments at a Coke machine).

A message center is an agency for expediting the transmission of messages, and for recording them. Of course, it has to record them before it can expedite them, and that takes time. Also, this is where file copies are "pulled," so it was well along towards noon when the Skromptsk communication was passed along into the mailing room.

The mailing room was pretty busy that day. There were a lot of letters on the long table where a clerk was stamping them "Hq.Wng.Def.Comd.Mailed 1155 Feb 27" and throwing them into a basket. Another clerk was picking them up one at a time as he came to them, addressing envelopes for each one, and stuffing them into the envelopes. Still another clerk was sponging them and sealing them. It began to look as if the Skromptsk letter would be handled before too long, though it had been laid aside for special handling and registering, for it was *confidential*. But shortly a girl came in with an armful of mimeographed letters destined for mailing to "All Class I, Class II and Class IV Installations, subject: Tabulation of Data from Drivers of Trucks Hauling Refuse, Form 118-Z-24."

The Sergeant in charge of the mailing room groaned as the girl dumped her load on top of the other letters.

"Let's get at it!" he ordered. "I guess the quickest way to clear this place out will be to mail out these mimeographed letters. It doesn't take long to run the envelopes through the addressograph machine."

"Shouldn't we mail out those letters underneath?" asked the Corporal. "They came in here first."

"I know," admitted the Sergeant, "but we have to type the address on the envelopes for every one of them. That would take a couple of hours. So let's send out this mimeo stuff first."

The mimeo stuff was all out of the way by 4:00 P.M.

"Now," said the Corporal, "shall we start typing envelopes for these typewritten letters?"

"O.K.," the Sergeant agreed, "we'll do as many as we can. But it's only a half hour till quitting time, so I doubt if we can finish them all. Begin with those on top of the pile."

"But the earlier ones are underneath."

"What's the difference? They won't go out tonight anyway."

"But won't the addressees put up a squawk that they didn't get some of these letters in time to comply with them before the deadline date?"

"Sure. But we date-stamped 'em as mailed at eleven o'clock this morning; that covers *us*."

"I get yuh, Sarge," grinned the Corporal, who had a date at five-thirty downtown.

The mail room closed promptly at four-thirty. It always did. The Skromptsk letter lay there over the week end; it was not actually committed to the custody of the U. S. Mails until 2:00 P.M. the following Monday.

—•—

OVER the week-end, on the other side of the polar ice cap, a blizzard raged at Skromptsk; it raged at Amsk, Krasnigrad, Schulenberg, Lovgorod and Chang Hao. But tractors roared over the snow to each of several towering structures looming up in the Arctic darkness against the white background, the same kind of towering structures that had been built at a score of other places during 1965. But no word of this reached the Western Hemisphere, for a dragnet was spread to sweep up every foreigner within a hundred miles of any of these places. Just to make sure, a considerable number of local residents were swept up, too, all protesting tearfully that they were loyal and patriotic comrades. Their deaths were swift and unostentatious.

It was only a miracle that two American spies escaped the dragnet and began their long, heroic march southward. One of them survived to stagger into an agent's hideout in neutral territory, two weeks later. He was a hollow-eyed, ragged, bearded, dirty, emaciated specter, raging with fever and raving with delirium, but he carried in his pocket a message he had written a few days earlier and sealed in an envelope marked "Deliver to the nearest American citizen."

"ACTION, GODDAMNIT, ACTION!"

Lieutenant Colonel Burke had begun to learn the "ropes" so well that he was deemed experienced enough to take a tour as week-end duty officer of the G-2 Section. He had also learned enough to know that any letters or telegrams coming into the Headquarters after twelve noon on Fridays would never be distributed to anyone capable of taking action upon them until some time Monday; a civilian clerk in the A.G. Section might have looked them over Friday afternoon and separated them into baskets according to Section; some of those destined to be handled might have been taken to the G-2 Section, where they would wait until Monday for Miss Wiggs to route them, with

snowflakes, to the appropriate branch offices. It was Burke's job to look through these for anything deemed "hot" enough to warrant special action; anything that had not reached the Section, however, was supposed to be looked at by the Headquarters duty officer.

By Sunday morning Burke had looked through all the letters and TWX's that had piled up in Miss Wiggs' "In" basket since Friday, and was taking advance action on one or two papers that he knew would be "bucked" to him on Monday, when he received a phone call from the Headquarters duty officer, WAC 1st Lieutenant Dorothy Wilson.

"I have a TWX here," she reported. "It came in late Friday, but was not unscrambled before quitting time. After I got through with the rest of the stuff, I got to thinking about it and decided to run it through the converter myself. I think it may be important, and it looks like a G-2 matter."

"Send it right up," he told her.

The message proved to be from the Military Attache in China, and had been relayed from San Francisco. The text read:

REPORTS INDICATE THAT THE ACTION ANTICIPATED AS A CONTINGENCY IN PAR ONE FIVE ABLE RPT ONE FIVE ABLE CMA RED PLAN RPT RED PLAN IS IMMINENT PD TENTATIVE DATE CMA SET EARLY IN FEBRUARY CMA WAS ONE EIGHT MARCH RPT ONE EIGHT MARCH.

Burke looked quickly at the calendar to confirm his recollection. It was, as he thought, Sunday, March the 18th.

Burke had not read or heard of the "Red Plan" referred to in the TWX. But the words "contingency" and "imminent" sounded ominous. He reached for the phone at once and dialed the home number of General Kommer. Ten times he heard the ringing signal but no one answered.

Then he dialed the number of Colonel Records, but with the same result.

He arose and paced the floor. Should he call the Chief of Staff? Through his head hummed the phrases he had heard over and over again so many times since he had entered the Headquarters: "It won't go out today . . . buck it to General Kommer . . . no use to send a TWX, they won't get it till Monday," etc. Would the Chief of Staff jump down his throat for bothering him on Sunday?

Burke decided to risk it. He had been bawled out before, and it wasn't nice. He remembered the words of his Professor of Leadership and Military Psychology: "Initiative," the Professor had said, "consists of stealing home with the bases full, the score tied and two men out in the ninth. If they tag you out, it will be unwarranted assumption of authority and you'll be benched in disgrace. But, gentlemen, you are military leaders; they don't hire you to play safe, but to make decisions and take the consequences."

Burke grabbed the phone and dialed the Chief of Staff's residence number. A female voice answered and told him that the General was at church. He would not be home before one o'clock. What church? The Westminster Episcopal Church on Washington Avenue.

Burke wiped the sweat from his brow. This was getting tough.

He dialed the church and listened while the phone rang and rang. Finally a voice answered and told him angrily that services were going on.

"It's a matter of extreme emergency," Burke replied. "I must talk to General Reddy at once."

(Now he was in for it if this TWX proved to be a trivial, routine matter.)

An interminable wait, and then a crisp greeting.

"Sir, I hate to disturb you. We have a TWX that came in Friday and we fear it may be important."

Burke read the message. General Reddy remained silent till he finished; then he forgot that he was in a church.

"What!" he roared. "You say that came in *Friday?* Goddammit, why didn't somebody tell me? Never mind explaining that now, however, but listen closely to what I tell you to do; then don't fail to do it exactly as I order."

"Yes, sir."

"*First,* broadcast the following *in the clear* to all commanders of Arctic diversion stations: 'Alert Plan One effective at once.' Got that? 'Alert Plan One effective at once.' "

"Yes, sir."

"All right. *Second,* relay that TWX to the War Department. *Third,* have the Headquarters duty officer summon all members of this Headquarters to their posts at once."

"Yes, sir."

Burke rushed down the hall toward the Signal Center, silently thanking heaven that there were people like General Reddy still available to take charge in emergencies.

At the Signal Center, there were about to be delays imposed; they wanted the alert message typed in triplicate on a certain form, and the initials of the Chief of the G-2 Section placed in a certain block on that form; they were reluctant to accept Burke's assurance that the Chief of Staff had authorized it to go in the clear. But Burke had been inspired by his brief conversation with General Reddy; he suddenly became a life-sized facsimile of that doughty Chief of Staff.

"Goddammit, Sergeant!" he roared, "I'll see you court-martialed and shot if it's the last thing I ever do."

"Yes, sir!"—and the Sergeant complied with quiet but sudden alacrity.

—•—

NOW, I would like to relate that the alert reached the diversion stations in the nick of time, and that the TWX reached the War Department soon enough to initiate the counter-measures set up for use by that Headquarters. I wish I could say that the WAC Lieutenant had discovered the fatal TWX and unscrambled it two hours sooner. But alas! It was too late. When the diversion stations went on the alert and turned on their power, the guided missiles from Skromptsk and fifty other stations across the polar cap had already passed so far beyond our diversion radii that little or no influence upon the descending branches of their trajectories could be effected.

The personnel of Headquarters Warning Defense Command were scurrying to their posts when the rocket labeled *"HWDC"* hit the building. The lucky ones were those who failed to get the alarm message soon enough, or those who lived so far in the country that they were still miles away when the blinding flash and the prolonged roar shook the city and reduced it to rubble. Lieutenant Colonel Burke and the WAC duty officer never knew what had hit them.

Thus began World War III.

Thus ended World War III.

PERIMETERS in PARAGRAPHS

By Col. Conrad H. Lanza, Ret.

THE GENERAL SITUATION

Prepared by a widely-known military scholar and writer, PERIMETERS IN PARAGRAPHS is a recurring feature dealing with the military, political and economic realities in world affairs. Whereas an understanding of these realities is deemed essential to the American soldier, it is emphasized that PERIMETERS IN PARAGRAPHS reflects the opinions of the author, alone. This installment covers the period 16 June-15 August 1947.—Editor.

THE WORLD is menaced by several minor wars which offer the unwelcome possibility of developing into a major war. To meet this situation three plans have developed, one being Russian and two American.

RUSSIAN PLAN

This is based upon the writings of Karl Marx, founder of modern Communism. Marx wrote a monumental work—*Capital*—which for Communists is their Bible. He explained some of his theories in considerable detail, others merely by implication.

Lenin expounded some of the latter. Among these he stated (official Soviet edition):

"The victory of Socialism may come originally in a few capitalist countries or even in a single capitalist country. The victorious proletariat of that country, having expropriated the capitalists and having organized Socialist production at home, will rise against the remaining capitalist world, drawing to itself in the process the oppressed classes of all other countries."

The victory of Socialism originally came in Russia, which has expropriated its former capitalists. According to Lenin's preachments, it is now up to Russia "to rise against the remaining capitalist world," presumably at an appropriate time. The method of "drawing to itself the oppressed classes of all other countries" is being carried out by the formation of Communist parties and 5th Columns in other states, whose object is to aid Russia in overthrowing their own present governments. The implementation of this idea requires *offensive* action.

In his speech of 9 February 1946, Marshal Stalin gave the latest interpretation of current Russian policy. He described the capitalist system as one which provoked recurrent economic crises, the alleviation of which forced capitalistic countries periodically to attack other countries. That had happened in the past, and was bound to happen again — with Russia the most likely next victim. To prepare for that Russia was starting three successive 5-Year Plans. At the end of the final Plan there would be resources to meet that next war. Stalin's idea differs from Lenin's in that it foresees a *defensive* war, as he anticipates an attack upon Russia.

The 5-Year Plans provide, in part, for the consolidation of Russia's position in satellite states. In line with this is the desire to expand Russian military holdings in order to push the expected aggressor as far from the home land as possible. Followed logically, this policy would eventually mean the absorption of all of Europe and Asia—a big task, but for Russia probably an attractive one.

COMMENTS ON RUSSIAN PLAN

It is true that in *industrial* states there have been depressions, which *sometimes* have been followed by war. However, the form of government has not been the cause of these depressions. They occurred in England when it was an autocracy, and later when it became a democracy. They have also occurred in totalitarian countries and in the United States, which has always been a democracy.

Depressions are characterized by a decrease in sales which results in decreased production and consequent unemployment. Among other things, the cause of a decrease in sales may be too high prices in home markets or loss of foreign markets. The time-honored remedy for a depression is to reestablish the home market by decreasing prices, which requires no war, and/or to secure new foreign markets, which may require a war.

During the four centuries following the discovery of America, the industrial countries obtained new markets, partly by discovery without war, and partly by colonial wars. Such wars did not necessarily follow depressions. Their primary object was to raise the home standard of life, which was usually accomplished by the exchange of consumers' goods produced in the home country for raw materials available in the colonies. Both parties benefited from the exchange of goods.

Russia believes that a new depression will come to the United States within a short time. She claims that then the United States will undertake a new war, or that the time will then be propitious for Russia's expansion through Europe and Asia. In either case

World War III. Consequently the necessity for preparing for a vast new conflict.

TWO AMERICAN PLANS

Both assume that World War III is not inevitable, and may be prevented.

One plan was ably presented in the July number of *Foreign Affairs*. The author is anonymous, but the internal evidence indicates it was probably written by a high officer in the State Department.

It sets out that Russia is internally weak and may fall apart from interior causes if we just wait awhile. True, this can neither be proved nor disproved, but it is highly probable. Meanwhile a strong hand is urged to oppose aggression. The United States should be the spiritual head of the free nations opposed to the sterile ideals of communism. Most important is to avoid a depression at home. That would encourage Russia and might lead to disastrous results.

The second plan, also from the State Department, is known as the Marshall Plan because it was first presented by Secretary of State Marshall at Harvard University on 5 June. The essence of this is that

"To help start the European world on its way to recovery there must be some agreement among the countries of Europe as to the requirements of the situation and the part those countries themselves will take in order to give proper effect to whatever action might be taken by this government. It would be neither fitting nor efficacious for this government to undertake to draw up unilaterally a program designed to place Europe on its feet economically. This is the business of the Europeans."

Statements by high officials and in Congress indicate that the contemplated action by the United States is to grant subsidies called "loans." An estimate presented in the House on 23 June by the Honorable C. E. Merrow contemplated an expenditure of some $24 billion. Spread over a period of years it was hoped this would suffice to make West and Southeast Europe self supporting, while halting the sinister spread of communism. Comments from others indicated that many believed that even if $5 billion were required annually, this would be a small tax upon this country if it succeeded in avoiding World War III.

The two American plans are independent. Our State Department is opposing Russian aggression as envisaged in Plan 1, and is favoring the Marshall Plan. It may be assumed that these plans represent American policy at this time.

COMMENTS ON AMERICAN PLANS

The advance of Communism does not directly threaten the United States. If such a policy is followed, however, Communism will ultimately swallow all of Europe and probably Asia. It will then be in a position to reach our shores. Russia's advance is not unlike that of the Moslems centuries ago. It took hundreds of years of war to stop the Moslems and drive them back.

How long it will take to stop Communism no one knows. Events move faster than in the days of the Moslem wars. But the experience of such wars should not be disregarded. Clearly, history teaches that the advance of a large nation imbued with ideals and competently led can be stopped only by fighting. Remember the French advance after their Revolution.

If continued, Plan 1 will result in Russia's being confined to her present territories (including her satellites) behind a wall of states controlled by the Western Powers. Believed at the time to be a way to avoid a war, a similar attempt by Great Britain to encircle Germany during 1938 and 1939 actually provoked war. The uniting of Americans, British, Chinese and Dutch during 1940 and 1941 in the Pacific to avoid another war again provoked one. Encircling Russia will not prevent a war, although this may not come for some time.

Subsidies are not a promising way to avoid a war. In fact, the modern civilization of the Western Powers may be compared to that of the Roman Empire. The Romans also enjoyed a marvelous expansion of industries, transportation, luxuries and standards of life. And like ourselves, Rome wanted no wars, and granted subsidies to less developed nations, commonly known as the barbarians. For a time that worked. Then the subsidies had to be increased. Finally, the barbarians became strong and they entered Roman territory and seized what they wanted.

Notwithstanding all of our subsidies to China, extensive anti-American riots occurred in that country in the current year. Neither Russia, nor any other country for that matter who received large subsidies during World War II, is showing gratitude for what we did. Receiving subsidies is the easy way for a nation to arm. It may then at a propitious moment turn against its benefactor.

West and Southeast Europe prefer democracy to communism. However, they fear the latter. They are reluctant to compromise themselves, not being sure which system will advance.

West and Southeast Europe are not self supporting as to food and probably cannot be made so. Two sources of supply exist—one to the east and the other to the west. Russia controls the former, and the British and Americans the latter. West and Southeast Europe would prefer to buy in a free market. If there is no free market they will join either the East or the West—whichever gives the better terms. The Marshall Plan is the American bid. Russia cannot meet it now. Later, if her food production increases (as it probably will) she may make a bid. Until then the Western Powers have their opportunity to consolidate their position in West and Southeast Europe.

Comparing the Russian and American Plans, Russia is apparently anticipating World War III after the United States is weakened by a hoped-for depression. The United States wishes to avoid World War III, and hopes it will be averted by a change of regime in Russia. Both Powers are willing to wait, each believing that time is in its favor. Who is right? There are so many contingent and unforeseeable factors in this situation that it is impossible to calculate international events for any distance into the future. No one knows what the outcome will be. The current times are filled with conflicting ideals, mutual suspicion and distrust. The world is worried. As described by the highest statesmen, the times are very grave indeed.

THE MARSHALL PLAN

BRIEFLY, the Marshall Plan is an invitation for the European countries to get together, find out what they can do to relieve their present state of economic insufficiency, and determine the balance required to fulfill their minimum needs. Our Secretary of State promised that the United States would be ready to grant aid provided a workable program was devised and agreed to. This offer was made at Harvard, in a speech delivered 5 June.

Great Britain and France accepted the American proposition forthwith, and understook to hold a conference for the purpose of drafting a European economic program. Invitations were sent to Russia to join in a preliminary conference to be held at Paris on 23 June. Both inviting nations presented their proposition to Mr. Molotov, Russoian Foreign Minister, at Moscow on 19 June. On the same day, Mr. Bevin, British Foreign Minister, in the House of Commons warned that the period of Anglo-Russian appeasement was over. He made it plain that Britain would proceed with the Marshall Plan with or without the Soviet Union, or even against it if necessary. He would regret a conflict of ideologies, but would face it if he had to.

Under these conditions Russia hesitated. On 23 June she agreed to the preliminary conference at Paris, provided it be deferred to the 27th. This was done. The conference was then duly opened, the three Foreign Ministers composing it. The business of the conference was to arrange for a program listing each European nation's requirements as to food and supplies, and to ascertain how much could be obtained by trading between themselves. In accordance with the Plan, the balance will be sought from the United States.

While the conference was in progress, Secretary Marshall delivered another speech to the Women's National Press Club in Washington on 1 July, stating

"It would be incorrect to say that the people of this country make no demands regarding the utilization of their contribution to world recovery. They emphatically demand that whatever they contribute shall be effectively used for the purpose for which it was intended; that it should not be expended to serve selfish economic or political interests, and that it should be employed specifically to assist in economic rehabilitation. . . ."

At that date the British-French proposal was that the conference arrange for a steering committee, in which all European states would be represented, to draw up the desired program. Next day, 2 July, Mr. Molotov declined to accept this proposition. He proposed that the United States be asked exactly how many dollars, supplies or credits she was ready to hand over, and under what conditions if any. If this were known, he was prepared to join in on a program as to how to divide up the handouts. Great Britain and France refused, on the ground that the American offer was predicated on the European states first doing something to help themselves. The preliminary conference then broke up. Returning to London, Foreign Minister Bevin on 4 July again warned Russia against carrying provocation too far. He declared that nothing would separate the United States and Britain. Thereupon, the British and French—determined to go ahead with, without, or even against Russia — invited all European nations, including Russia but less Spain and Germany, to a full conference to be held at Paris on 12 July to discuss arrangements for complying with the Marshall Plan. Spain was not invited since its government is not favored by the United Nations; Germany was excluded because she has no government. Besides, Germany is a very controversial subject and it was foreseen that an agreement upon German economy was improbable.

Russia declined to attend the new Paris conference, and so did the Russian satellite states. Two of these, Poland and Czechoslovakia, wanted to attend, and it was necessary for Moscow to take appropriate measures to cancel their preliminary action.

The new Conference met on 12 July and, after appointing various committees to undertake certain investigations, on 15 July adjourned until late in August.

COMMENT

Russia's refusal to submit a program of what it needs and what it could contribute to the recovery of other European states is probably based on military reasons. Such a study, if honestly compiled, might reveal that a large part of the state's own food and industrial activities were connected to war preparations.

RUSSIA

GENERAL POLICY

In the preceding number of this JOURNAL, explanation was made that the strategical principle of *security* is now widely interpreted to mean that Big Powers need to occupy, or control, vast areas outside their own boundaries —this in order to deny such areas to a possible enemy at some future date.

Apparently guided by this idea, Russia is concentrating on extending her hold outside of her own boundaries, with special interest at the moment in consolidating her position in the satellite states along her western frontier. Altogether, these states have a population of about 87,000,000 people, who before World War II had a higher standard of life and more freedom than was the case in Russia. They are good material for increasing war power, for their troops were brave and their resources considerable. Besides, through them lies access to the rich countries of the Mediterranean and Western Europe.

The problem is to make these small nations forget about their previous independence and become loyal followers of Russia. At the same time their economies are to be integrated into the Russian system.

Spread of communism is not the object. Communism is the convenient vehicle by which a totalitarian government can readily extinguish opposition.

Russia and its present government is the real objective. This needs to be made safe from attack, and if possible made greater and stronger.

PROGRESS OF CONSOLIDATION

Communist governments have been functioning for some time in Poland, Czechoslovakia and Yugoslvaia. There is no communist party in Poland, and terrorism and force is the method used to impose a communist government upon a communist-hating people. In Czeschoslovakia and Yugoslavia the communist party forms a minority which governs through control of the armed forces and terrorism. In these three countries Russia operates through the local government.

In Hungary, Romania and Bulgaria, Russia operates in part through local governments and partly through occupation forces. A regular procedure has been established to install complete communist governments through a semblance of legality.

The first step is to destroy opposition parties. Opposition leaders are arrested, usually charged with conspiring against the government. It suffices to charge that such leaders in conversation expressed sentiments favorable to the Western Powers, or wrote letters to some foreigner. The entire opposition party is then outlawed by police decree, on the ground that since their leaders are corrupt all members are culpable. Party funds and property are confiscated and members are deprived of voting on the ground that they are undesirable citizens.

Many other persons are deprived of the ballot on various excuses, some of them rather absurd—for example, that numerous Jews used to be important Nazis . . . that some workers used to own land, since expropriated without compensation . . . that they are relatives of opposing party members, etc. No communist is disqualified. In some districts 70% of the citizens have had their names expunged from the voting lists. In theory such persons are permitted to appeal, provided this is done within 8 days, which is manifestly too short a time for the hundreds of thousands involved. The result is that the communist party, by removal of its opponents, has a majority of voters authorized to vote. At the "election" the single ticket carefully selected by the communist leaders is "unanimously" selected.

Other Russian infiltration methods include control of the press through denying paper to non-communist publications, furnishing transportation to communist candidates and preventing non-communist candidates from using any transportation, financing communist parties, compelling communist doctrines to be taught in schools and colleges and to workers with no provision for teaching other doctrines, and controlling all radio stations and broadcasts.

The United States has protested by letter against these Russian activities. The letters have had no effect and are not likely to, except that they accentuate the differences between the United States and Russia.

MILITARY ACTIVITIES

Between 7 and 9 June, military conferences on a high level were held at Belgrade between Russia and the Balkan satellites. The decisions arrived at are not yet known. Presumably they covered some plan of operations for the Balkan area.

Shortly after this conference it was announced that certain Balkan railroads of standard gauge would be changed at once to the Russian gauge which is broader, thereby facilitating rail movements to and from Russia. Two lines have been identified to date as to be altered without delay. One is from Iasie (or Jassy) westward to Arad on the Hungarian frontier. The other is from Galati to Corabia on the Danube. At the latter point a bridge is to be built and a 30-mile connection to the Bulgar railroad system at Pleven (or Plevna). It will probably take a year to complete the latter line, and its location might indicate concentrations toward Greece rather than toward Turkey. Arad is an excellent location for a railhead for expeditions into Hungary or beyond toward Italy.

German POWs returning from confinement in Russia report a speeding up of arms output at plants beyond the Urals. Important tank plants are at Kharkov, AAA materiel about Kiev, heavy ordnance and machinery (possibly for naval use) at Leningrad, and air raid drills are reported to be common.

According to British reports, about 30 Russian divisions, partly German trained, are concentrated north of Manchuria. This has not yet been confirmed.

GREECE

THE POLITICAL SITUATION

On 20 June an agreement was signed in Athens between the United States and Greece, under the provisions of the Act of Congress, approved 22 May, authorizing assistance to Greece and Turkey. The agreement sets up an American mission which will from time to time determine the specific assistance to be furnished. The mission will have the right freely to inspect the utilization of assistance coming from the United States, and assure itself that this is being applied as intended. Greece agrees to keep such records and submit such reports as the mission indicates.

The American mission has a military section which has the right to advise Greece on how best to employ its forces against guerrillas and bandits, and protect its frontiers. The chief of the mission is Mr. Dwight P. Griswold. Supplies shipped to Greece by the United States to date include pack artillery, infantry weapons, ammunition, motor transportation and commissary supplies, to the value of $35 million. An additional $115 million is to be disbursed by November to complete the contemplated program.

The United Nations Investigating Committee, which had inspected the situation on the ground, submitted its report on 25 June as to the facts. It was signed by the three Big Powers—the United States, Great Britain and China—plus five small Powers. The report found that Yugoslavia had recruited, organized, equipped and trained units

for combat against the Greek government, and at appropriate times despatched them across the frontier. It maintained an escape avenue for them, and upon retreat furnished hospitilization and new arms, ammunition and supplies. Albania and Bulgaria were found guilty of the same acts, except that they did not furnish appreciable amounts of arms and munitions. Greece was found culpable for having discriminated against Macedonians, and thereby having aroused them to oppose the government by force.

A minority report was signed by Russia and its satellite, Poland. This found Greece excusively responsible for all frontier incidents, fighting and invasions of Albania, Yugoslavia and Bulgaria. France, the remaining member, signed nothing. Fearing a possible Russian advance into western Europe at some future date, France does not wish to antagonize that country nor take sides between Russia and the Anglo-American Powers in any differences of views between them.

Greece formally applied to the United Nations on 26 June for action under the provisions of the UN charter, alleging that the UN report conclusively showed that Greece was being attacked by three neighbors. Next day, the United States moved that the United Nations use economic sanctions, or if neccessary armed force against the Russian Balkan satellites if they continued to support guerrilla warfare against Greece. On 3 July, Great Britain seconded the American proposition, and five days later Russia proposed that the UN take steps to compel Greece to cease its hostile acts against the Russian satellites. Russia also proposed that all foreign troops and military personnel withdraw from Greece.

On 17 July the guerrillas operating against Greece, with headquarters in Albania, established a "government" for the "free" peoples of Greece. General Markos Vafthiadis assumed command. A radio propaganda station was established. "People's Courts" were to be appointed to try all and any opposed to "freedom." This action follows standard communist practice. In this case, the headquarters and presumably the 'People's Courts," being in Albania, cannot be reached by the Greek government unless a regular war is undertaken. The "People's Courts" are terrorist organizations and seek to condemn enough citizens in each community captured to instill terror into the population.

A United States resolution proposing establishment of a semi-permanent UN frontier commission in the Balkans was vetoed by Russia on 29 July. Two days later, Greece again applied to the United Nations asking for economic and military sanctions to halt the spread of the undeclared war being waged against her by Albania, Yugoslavia and Bulgaria.

The foregoing moves within the United Nations refer to the Security Council, which is completely deadlocked, with the Western Powers plus China supporting Greece, as against Russia supporting her Balkan satellites. France remains silent. It being impracticable to obtain action, the United States on 12 August moved to obtain a vote in the General Assembly, scheduled to meet in September, in support of its views.

By mid-August American aid to Greece was becoming effective. Besides direct military assistance, a substantial program for reconstruction of ports, roads and railroads has been started.

COMMENTS

Under the Charter of the United Nations no action can be taken against a nation unless the five Big Powers all consent. If a single one of the Big Powers protects a satellite through the exercise of its right of veto, the UN is helpless. It can only act provided some nation antagonizes all five Big Powers at the same time. Few nations would be so stupid as to run such a risk. In the case of Greece the Russian veto effectively blocks UN aid to Greece. It may be presumed, with slight chance of error, that Albania, Yugoslavia and Bulgaria had previously arranged for Russian protection.

THE MILITARY SITUATION

Total number of guerrilla troops is estimated as 15,000 infantry. They are organized into battalions and are well equipped. Some battalions have American or British weapons previously dropped into Yugoslavia during World War II and no longer needed, owing to replacements by Russian models. Other weapons are of German make.

The Government has three corps in the field with a total force of about 80,000 combat troops including a small air force. Up to the present time next to nothing has been done to reconstruct roads and railroads. Greece is waiting for the United States to undertake this job. Roads are so bad that the UNRRA reports that 1 out of 7 of its motor vehicles required major repairs after every trip out of Athens.

In northern Greece the towns are full of refugees who have no work. Some came to escape the communist guerrillas and their People's Courts; others were evacuated by the government. Communists are small in numbers. They polled 6% of the vote at the elections last year. They seek to disrupt the national economy and thereby create unrest and disorder.

The government is not strong. It has to get along with 22 political parties, none of which can agree with the other 21. Athens has 13 daily papers all taking violent part in political discussions and squabbles. A large number of Greeks hope that the United States will send troops to their country to establish law and order.

As previously discussed in this column, the history of Greece for 2,500 years is largely a history of interior disputes. Minorities have not been willing to abide by the rule of a majority—election or no election. The quietest periods in Grecian history have been during foreign occupation. There is little prospect of this condition changing.

At the present time, the general disorder results in making it difficult to assemble troops by surface movements because of lack of lines of communication. If time permits the government could concentrate superior forces at any area where the communist guerrillas appear. The Greek intelligence service has recently improved. It has been possible during the two months covered by this account to bring superior forces within a few days against each large band of guerrillas which have crossed the frontier from Albania and Yugoslavia. An air transport has been organized by

which reinforcements and supplies can be rapidly sent to the front. At best, however, conditions prevent more than a division operating in any sector at any one time.

The communists are obtaining replacements by seizing able young men in their raids. This is a major reason for the people abandoning farms and rushing to garrisoned cities for protection. Recruits receive usual communist training, including accounts as to an alleged condition approaching paradise in Russia and its satellite states. However, POWs captured report they were kept confined to training camps, and were not permitted to visit this alleged paradise.

Main fighting has occurred in northern Epirus. On 10 July the II Greek Corps directed their 8th Division to attack 4,000 communists between Kastoria and the Albanian frontier. Contrary to usual practice, the communists did not immediately withdraw, but presented a determined opposition.

Believing that the main Greek force had been definitely committed, a second force of 3,000 communists on 12 July crossed the frontier from Albania at Borozani, where they captured an outpost. The road forks just south of the frontier in this area. One force of 500 men followed the left fork and attacked Konitsa, 5 miles to the east, while the remaining 2,500 took the right fork heading for Ioannina, 25 miles to the south.

The II Corps acted very promptly. Part of the 8th division was sent south from Kastoria, the garrison at Ioannina went north to meet the enemy, and troops were flown in. Konitsa had a garrison of 2 infantry companies. They had a good defensive position, and held out. The communists headed for Ioannina advanced on 13 July 6 miles to Negrades, where they met the Greek garrison, which had artillery. The communists did not care to push an attack. By the 15th the Greeks had heavy artillery and some fighter planes. They counterattacked, and the communists retreated back into Albania. The Greek efforts to encircle these communists by an attack upon their rear by 8th Division elements coming from the north failed. The greater part of the communists appear to have escaped, not without some losses.

A communist flank guard of 1,500 men which had crossed from Albania near Kalpaki, 15 miles west of Ioannina, was also stopped on the 15th. Planes which brought Greek troops forward had to land on a field which was under water, but they accomplished their mission. However, here, too, although unsuccessful, the communists were able to retreat into Albania, which was just in rear of their positions.

On 21 July communists from Yugoslavia crossed the border near Phlorina and burned two villages through mortar fire, using heavier mortars than any possessed by the Greek Army. Next day similar raids were made due north of Salonika. The III Corps, based on Salonika, rushed troops to the scene of the raids but was unable to capture the communists, who had withdrawn across the frontier.

A communist battalion on 25 July managed to arrive at Grevena, 25 miles from the Albania frontier. They arrived undetected, by going through mountains and forests. An attack was launched at 3:00 AM but failed. The communists had had no issue of rations for 4 days and were nearly exhausted. Greek troops arriving by noon were able to disperse the communists, many surrendering.

Communists from Bulgaria at the end of July raided across the border and some reached towns on the Aegean Sea. The towns were not captured, but the communists ravaged the adjacent country.

During the first half of August numerous bands based on Bulgaria crossed into Thrace and pillaged the country. Other raids occurred from both Albania and Yugoslavia. None were able to accomplish anything important. Their value to the communist cause was as a nuisance. It kept the country disorganized, prevented farming, set up a refugee problem.

COMMENTS

As long as the communists are based within Russian satellite states, where they can rest and reorganize and where arms, munitions and supplies are issued, there is slight probability of being able to stop raids across the Greek frontier. Unless of course the Greek troops have the same right to cross frontiers as the communists have. It seems probable that if this were done, it might lead to a major war. Consequently the Greeks have been restrained and have not crossed frontiers despite Russian claims that they have.

The war in Greece is a minor one, but it is a threat to world peace and a very dangerous one.

CHINA

THE POLITICAL SITUATION

The Civil War between the Kuomintang (or National) Party headed by Generalissimo Chiang Kai-shek and the Communist Party headed by Mao Tse-tung has in no way abated. It is driving the country into misery and desolation. Neither side has the military force and intelligence to defeat the other. The war has been in progress nearly a quarter of a century and seems no nearer an end than it ever was.

The Kuomintang has abandoned all efforts to negotiate with the Communists or to engage in a united government. This decision, which is a reversal of the long continued policy of attempting to settle differences by peaceful methods, seems to be partly due to American action. On 25 June the United States declined to grant Kuomintang China a loan of $500 millions. It announced, however, that there was no reversal of American friendship toward China.

Next day the Chinese Minister of Economic Affairs made a special plea to change the American attitude. He painted a very dark picture of the military and economic situation. The soldiers, he claimed, were partly on strike for higher pay and refused to fight, which explained why the war could not make progress. Besides, the general economic situation was awful. Unless American help was given promptly and

without stint, inside of a year the Communists might be the winner. Then there would be nobody to receive and use American loans. It would be another case of too late and too little.

This pitiful report failed to change the attitude of Washington. It did result in sending Lieutenant General Albert C. Wedemeyer to China with instructions to investigate, report upon and submit recommendations as to the true situation. General Wedemeyer arrived at Nanking on 22 July and immediately started an inspection of all of China within Kuomintang control. By mid-August, when this account closed, this inspection had not been completed.

In the meantime, on 30 June the Kuomintang leaders determined to do something. They decided to abandon the policy of having their armies seize and hold key cities. Instead they were instructed to find the enemy and defeat him. From now on the war would be all out for victory. All this sounds very good. This column has repeatedly reported that the Kuomintang policy of holding geographical points was strategically unsound. It left the entire country to the enemy. As it is the country which provides the food, this resulted in famines in Kuomintang areas while the Communists had plenty. Notwithstanding this new policy, as usual in China no change in military movements or tactics had been observed up to mid-August. Plenty of talk, but little corresponding action.

It seems probable that the Chinese resolutions, like others previously passed, were to impress the United States, or form a base for propaganda, without much real determination to change anything.

The economic conditions are in fact bad, and getting worse. The cost of necessities is so high that the common people are unable to maintain more than a minimum standard of life. All plans to remedy this are based upon loans from the United States. Yet American-trained Chinese admit that this would be only throwing good money after bad, and would have to be continued indefinitely.

On 4 July Kuomintang China ordered a general mobilization. New divisions are to be raised and trained in Formosa on American principles with American equipment. The refusal of the United States to grant that $500 million loan did not interfere with a prior grant of military supplies left over from World War II and whose value at purchase prices was about $2 billions. It was given to China for one fourth of that amount. About 1/3 of the materiel has been delivered. The remainder is scattered through various Pacific isles but is available upon call.

In a speech on 6 July Generalissimo Chiang Kai-shek stated that his nation would die unless they conquered the communists. So far as concerns his party, this may be so.

While the Kuomintang Government has materially declined in influence and strength, the communists had made corresponding gains. Particularly they have gained much American equipment through desertions and capture. The Kuomintang claims that the communists have also received large quantities of Japanese munitions and weapons, through Russia's acquiescence. This charge has not been proved.

The communists have their territory organized into 8 areas, each under a commissar. In each area there is a local elected government, where the communists, Kuomintang, and independent parties each hold one third of the voting members. On paper this scheme looks fair and the communists have announced their willingness to settle differences with the Kuomintang on a national scale on the same basis.

In practice the scheme is not fair. The communists not only hold a third of the votes, but they, and no one else, have a veto over the other two thirds. Moreover, the other two thirds must put up candidates approved by the communists. The Kuomintang representatives, for example, do not represent Generalissimo Chiang Kai-shek, but local Kuomintang leaders selected, installed and supported by the communists.

How do the Chinese people feel towards the warring parties? The majority are too ignorant and uneducated to understand political theories. In the communist zone, the people are impressed by the honesty of officials as well as the equable and reasonable taxation imposed. They resent the enforced conscription for communist armies, but as the Kuomintang has the same policy, there is no choice on that ground. The communists have improved the school system, and have introduced tomatoes, melons, beets, spinach, and other crops never previously grown. This was primarily to improve the ration of the communist soldier, but the people in general also profited. There has been confiscation of large estates, but the ordinary farm has not been interfered with, and tradespeople maintain title to their shops. Among a large and ignorant population, this policy has brought local support to the communists.

THE MILITARY SITUATION

According to Kuomintang sources, as of 1 July the total strength of their armies in the field is given as 1,750,000, while their intelligence reports estimate the communist forces on the same date as totalling only 800,000. Since the Kuomintang has an air force and the communists none, it would seem that the numerical superiority of the Kuomintang should be sufficient for a successful campaign. Only it hasn't been. The main theaters of operations are discussed in the following paragraphs.

North Theater, which includes Manchuria, Jehol, Chahar. On 15 June a communist force estimated as 150,000 men coming from the north had been attacking the South Manchuria RR between Mukden and Changchun. These two cities, plus the intermediate one of Szepinghai, were held by Kuomintang troops reported as 250,000 men. As usual the Kuomintang undertook no offensive, but contented themselves with defending their cities. The communists were therefore able to completely destroy the railroad between the cities. Rails were carried away, while the ties and telegraph poles were piled and burned. All bridges and culverts were demolished. The Kuomintang troops were supplied by air. To secure sufficient troops for defense, the Kuomintang withdrew its garrisons from Antung and throughout the territory east of the South Manchuria RR, except Fushun, site of a power plant and mines, which was held.

In their advance the communists captured large quantities of grain. This they made available to the local populace, resulting in a fall of food prices and an increase of communist morale.

The communists attempted to capture Szepinghai through determined attacks, starting 11 June. For the first time they were supported by a considerable force of artillery, alleged by the Kuomintang to have come from Russian depots. With this aid they were able to get into the town, where a savage street and house battle developed. The situation ended on 28 June when two Kuomintang divisions from the south arrived. The Communists then withdrew. At Mukden and Changchun no real attacks were made by either force.

According to Kuomintang intelligence the communists at Szepinghai fired 190,000 shells, caliber not stated. Such a number is in excess of the capacity of all plants in communist possession, and can only be accounted for by assuming they came from old Japanese dumps or from Russia. These Chinese reports lack confirmation. No serious fighting followed up to mid-August. At that date the Kuomintang armies had been reorganized and were stated to number 180,000 men. They were not under a single commander. Replacements, weapons, munitions and supplies were all short. What was coming forward was based upon informal action through personal friendships, and generally believed to be on a corrupt basis. No real troop training was in progress. Activities centered on erecting barbed wire, digging trenches deeper, and other defensive measures. The officers were reported as paying minor attention to troops and considerable to non-military activities. They were hated by the local populace. They are natives of south China, speaking a language unintelligible to the Manchus, and accused of being extraordinary grafters. Morale was low.

The Communists in mid-August were estimated as 150,000 strong, with main body between Changchun (excl) and Sian (incl). They were stated to be training for a new offensive intended to be launched in September.

The East Theater activities centered in Shantung. For two years the Kuomintang, based on the line Suchow (Tungshan on some maps) — Pukow, has been attempting to open the Tientsin and Pukow RR and clear Shantung. In mid-June a communist offensive developed from the area west to the T & P RR and east of the Peiping & Hankow RR. The area between these two railroads is 150 miles wide, and all communist territory. From there the communists raid the two railroads and keep them from operating.

To meet this threat and nuisance, the Kuomintang ordered their 53rd Army of 3 divisions to advance east from Tsingyuan (Paoting on some maps) to suppress the communists. Just as they were starting, 2 of the 3 divisions were detached and ordered north to save Szepinghai in Manchuria, so this movement died before it commenced. Whereupon the communists cut the railroads at numerous places and intensified their raids. They crossed the Yellow River at the beginning of July and established a bridgehead north of Tsinging.

The Kuomintang on 2 July started an offensive north following the T & P RR, which by the 9th had arrived on a line with Tsinging. At the same time another force started west from Tsingtao and a third south from Tsinan. Plan was to encircle the enemy. The communists did not wait. Moving by night, and more rapidly with cart transportation than Kuomintang by day with trucks, they passed between the converging hostile columns to fall upon their flanks and rear. This fighting lasted a full month, with alternate advances and retreats by both sides. The final result has been that the Kuomintang has gained a bulge with apex near Weihsien. They were not able to unite their three columns. The bulk of the communists were neither captured nor exterminated.

Sinkiang. During the last half of June and first part of July minor fighting occurred in frontier areas between Sinkiang and Outer Mongolia. The Chinese claim that on 5 July they captured the enemy commander, Colonel Sagmet, who had been wounded, together with 15 machine guns. Equipment and uniforms were found to be German or Russian. The Chinese executed Colonel Sagmet, notwithstanding his wounds, and without charges other than invading their territory.

Growing unrest and threats of revolt have appeared within Sinkiang. To meet this condition, China has been flying troops into Sinkiang to the vicinity of Urumchi (Tihwa on some maps). The only roads, which are not very good, from China to Urumchi are parallel to the frontier with Outer Mongolia and not far from it. A new road is under construction to reach Urumchi from the south, starting from Ssinghai Province.

Russia and China have made mutual diplomatic protests to each other.

COMMENTS

The situation of China is tragic. Its location in contact with the Siberian boundary gives it a special strategic position. The country lies intermediate between Russia and Anglo-American territories. It had been the hope of the United States that China could be made into a Big Power capable of supporting itself. With its immense population and extensive resources this was thought to be a distinct possibility. With that idea in mind, China was accepted as one of the Big Five within the United Nations. It now seems that this was a dream not likely to be realized in the near future.

According to despatches from Shanghai, the solution of the problem by local business interests is to split China into three parts—North to be Communist, Center to be Kuomintang, and South a new state. It would follow that North China would fall to Russia, while the United States supported and maintained the Center. The South would go to the British whose colony of Hong Kong is a haven of refuge for all kinds of Chinese, particularly the wealthy, who have no wish to see this safe and peaceful spot restored to China as it is now. This solution may seem a curious one, but it is illustrative of the many rumors flying through the Far East.

INDONESIA

THE DISPUTE

During World War II the Netherlands Indies were occupied by Japan. Upon the surrender of that country, the Netherlands had few troops available to reoccupy their former colonies. For about a year the British garrisoned key points, and authorized the Japanese 18th Army to continue to function while retaining their arms. During this period there were two movements.

One was by the inhabitants, who demanded that upon the departure of the Japanese they be permitted to govern themselves as an independent state. The other was by the Netherlands, who demanded that the colonies be restored to them. The British upon their departure a year ago turned over the key ports in Java and Sumatra to Dutch troops who had in the meantime been made available while the interior remained in possession of Indochinese forces. The latter established a capital at Jogjakarta and administered the country with fair success.

In the second year since the end of World War II the Dutch have increased their troops at the key ports to a total of over 100,000, including an armored division. Dutch naval ships established a blockade and a Dutch air force was organized.

The Indonesians recruited about 200,000 troops. These were poorly armed. Their air force consisted of about 40 Japanese Zero planes, old and some out of repair. Armor was limited to a few old Japanese vehicles. The Dutch commander, General Spoor, although outnumbered, felt that his army, equipped with modern materiel and transportation, mostly American, and with air and naval superiority, was more than a match for the Indonesians. He reported that he would be ready to assume the offensive in July.

The Indonesia commander, General Soedirman, feeling his troops were no match for his opponents' superiorily armed forces, decided to resort to guerilla warfare should hostilities arise.

Indonesia has a great quantity of products available for sale in the United States. The Netherlands wishes to sell this for dollars from which she can secure the American products which she desires. She is willing to pay the Indonesians for services and products delivered, but in local currency. The Indonesians want dollars themselves and object to the Netherlands monopolizing their trade. They demand the right to sell their products freely.

Ever since the return of the Dutch, their naval ships have blockaded Indonesia coasts, to prevent exports except through the Dutch-held ports. To circumvent this, the Indonesians secretly sent their exports through Sumatra to Malaya, where they had a good market. As the Strait of Malacca can be crossed by night the Dutch were unable to stop this practice.

The Dutch claim that the Indonesians knew of the serious economic condition of the Netherlands and were seeking to take undue advantage of it by lengthy negotiations relating to their independence, which the Netherlands had agreed to in principle, provided the independence recognized the authority of the Dutch Queen, and further provided that it was not effective until 1 January 1949. Until then they demanded a Dutch police force to ensure that the products desired for the Netherlands trade really did pass through Dutch hands.

The Indonesians agreed to all conditions demanded of them, except as to the Dutch police, which they claimed was an infringement of their independence. On this point war came, the Dutch alleging that their economic condition was such that they just couldn't wait any longer.

MILITARY OPERATIONS

The Dutch plan was to seize those parts of east and west Java which contained the rich plantations. Central Java of lesser economic value was not to be invaded. In Sumatra only those areas containing oil, tin and some plantations were to be seized.

Hostilities started on the night 20-21 July by Dutch advances from Batavia, Semarang and Soerabaja. An amphibious expedition of Marines landed against slight opposition near Banjoewang on the Strait of Bali. These Marines are 5,000 strong, and were trained in the United States during 1944 and 1945 expressly for service in the Netherlands Indies. At that time it was supposed that they would attack the Japanese. They arrived in Java, wearing US Marine uniforms, less insignia, with full equipment of tanks, motor transportation, flame throwers, artillery and bulldozers. Their landing was covered by air and naval support. The Indonesians had nothing to compete with such a finely equipped body, which had no difficulty in advancing after landing.

The Dutch air force on the opening day of hostilities raided all Inodonesian airfields and destroyed or disabled a part of the small Indonesian air force.

In Sumatra Dutch columns operated out of Medan and Padang, ports previously held, while an amphibious expedition landed at the south tip of the island and advanced towards the oil fields.

Little direct opposition has been met by the Dutch. Well equipped with armor and artillery, they have been able to march anywhere. The Indonesians have resorted to guerrilla warfare supplemented by a policy of destroying as far as possible the products which the Dutch are fighting to obtain possession of. With this idea in mind, they have fired oil wells and set plantations in flames. Sabotage is general and exists even in Batavia, which is supposed to be a Dutch stronghold. A reconnaissance by air by an American correspondent on 29 July disclosed 200 fires burning in southwest Java, one of the areas seized by the Dutch.

But the end of July it was clear that the Dutch would soon be able to accomplish the mission of seizing the productive areas. It was not clear that they would be able to exploit the areas.

On 30 July Australia and India applied to the United Nations for an order to the Netherlands and the Indonesians to stop fighting pending a determination of the dispute. On 1 August the Security Council by a vote of 8 out of 11 ordered the combatants to cease hostilities and settle their disputes by arbitration or other peaceful means. Three Powers — Great Britain, France and Belgium—did not vote. The first

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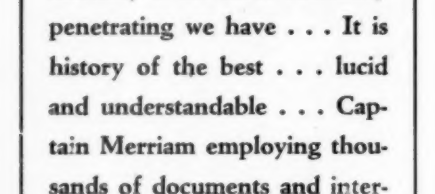

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two of these Powers hold veto rights in the United Nations. It is therefore to be presumed that the Netherlands before commencing hostilities had assurance that these Powers would use their veto to protect the Netherlands if necessary. Without some such assurance it would be hazardous for a small Power to start hostilities anywhere.

The Dutch complied with the UN order by issuing a cease-fire order effective at midnight 4-5 August. It did not agree to evacuate territories held, nor to desist from further occupations. Indonesia issued an order to cease hostilities. The Dutch announced that their blockade of Indonesia would continue. Notwithstanding the cease-fire orders, there has been no cessation of hostilities. It appears that the Dutch timed the hour for cessation of fire to correspond with the attainment of their mission of occupying certain areas. They hold the key points in those areas, but the Indonesians hold much of the surrounding country. Total Dutch casualties up to 15 August have been about 400 killed, wounded and missing. Indonesian casualties are unknown.

PARAGUAY

A SMALL WAR started in Paraguay at the end of February. To other countries a war in that far-away state is a minor event. Locally it is a tragedy. The present fighting appears to be typical of Latin American civil wars and is worth noting.

In June 1946 President Higinio Morinigo of Paraguay, who was in fact dictator, apparently expecting trouble, reorganized his government by a redistribution of cabinet posts. He took in two military parties headed by colonels, and the communists, plus his own party, known as the Red Party, who are republicans. He did not take in the liberal party, which is numerous. The latter thereupon proceeded to organize, secretly of course, a revolution, pending a free election. However, there was no election. As agitation increased against Morinigo he convened in January, 1947, a council of 14 generals and colonels. Morinigo at the same time dismissed from his cabinet one of the military parties and the communists, but retained the others. He so far disapproved of the recommendations of the council that he placed 12 out of the 14 members in arrest. Thereupon the army sympathies passed to Moringo's opponents.

The communists commenced operations on 7 March, when they staged an uprising in Asuncion, the capital. That failed. Next day, a large part of the army revolted and established a CP and a provisional capital at Concepcion, about 120 miles north from Asuncion. Thereafter operations were desultory, with the insurgents generally holding the north and Morinigo the central and south parts of the state.

By July of this year Morinigo, having recruited a small force designated as the I Corps, started north to drive his enemy out of Concepcion. He met surprisingly little opposition and announced the capture of that town on 31 July. He did not know that the main force of the insurgents had by-passed his advance, by marching south to the west of him. He was disagreeably surprised to hear that the enemy had arrived on 4 August near Asuncion. He now retreated. The I Corps was delayed by hostile forces, and as this account closes had not arrived at Asuncion. A defense of that town was undertaken by stray troops and volunteers designated as the II Corps. By 15 August heavy fighting was going on within the city. The diplomatic corps and 25,000 refugees fled across the Paraguay River into Argentina.

Morinigo personally evaded the hostile forces around his capital and reached Pilar close to the south boundary, where for the moment there was no enemy. This town is on the boundary with Argentina, to which escape if necessary should be easy. By 15 August when this account closed, no decision in this little war had been reached.

Extension Courses of the Artillery School

Following is a complete list of subcourses to be administered at The Artillery School. To insure that Extension Courses of The Artillery School present the latest trends in Artillery Tactics and Techniques, the preparation of several branch material subcourses has been delayed. The subcourses printed and probable printing dates for other subcourses are shown in Appendix I.

Any officer may apply for any particular subcourse needed in furtherance of his military education. However, to obtain a Certificate of Completion certain subcourses in a series must be completed satisfactorily.

Subcourses required for the award of Certificates of Completion in field artillery, antiaircraft artillery, and seacoast artillery subjects are shown in Appendix II.

20 SERIES

20-1 Map and Aerial Photograph Reading—II. Review of scale, distance, location, direction, elevation, profiles, intervisibility, logical contouring, stream and ridge lining, intersection, resection, aerial photographs, to include point designation grid, orientation, basic military identification, stereovision, and photos as map substitutes. *Texts:* FM 21-25, C1; FM 21-26.

20-2 Methods of Instruction. Responsibility; preparation to include methods, how to find source material, lesson plans, presentation, application, examination, discussion and critique; programs and schedules. *Texts:* TM 21-250, C1.

20-3 Military Law—Courts-Martial. Classification, composition, and appointment of courts-martial; jurisdiction of courts-martial as to persons and offenses; disciplinary power of the commanding officer under AW 104; procedure before trial by courts-martial including handling of charges, time accused is in confinement, duties of provost marshal and criminal investigation department; courts-martial procedure. *Texts:* TM 27-255; MCM 1928.

20-4 Mess Management. Importance of efficient mess operation; mess organization and duties of personnel; messing equipment; ration distribution; inspection and storage of subsistence; nutrition and menu planning, food preparation and conservation; sanitation; mess inspections, records. *Texts:* TM 10-205. C1; TM 10-45.

20-5 Motor Vehicles; Operation and Maintenance. Responsibility for operation, echelons of maintenance, duties of maintence officers, rules of the road, signals. *Texts:* TM 21-305, C1; TM 37-2810.

20-6 Artillery Materiel and Ammunition. The basic characteristics, description, care, and maintenance of automatic weapons, rocket launchers, guns and howitzers; care, handling (safety), uses, and characteristics of artillery ammunition. *Texts:* FM 9-6, C1; TM 4-205, C1, 2; TM 4-210. TM 9-331, C1; TM 9-350, TM 9-392, TM 9,757, TM 9-1901, TM 9-372, C2.

20-7 Principles of Infantry Tactics—1. Organization and tactics of the infantry rifle and heavy weapons company, positions, and functions of forward observers. *Texts:* FM 7-10, C1, 2; FM 7-15, C1, 2, 3; FM 6-135, FM 17-30, FM 17-36.

20-8 Basic Artillery Gunnery. Elementary ballistics and dispersion as applied to the conduct of artillery fire; principles of conduct of fire and preparation of firing data. *Texts:* FM 4-10, C1; FM 4 110, C1: FM 6-40, C1, 2; FM 44-11, FT 105--H-3, C8, 9, 10.

20-9 Basic Artillery Communication. Communication means; wire and radio communication, voice radio procedure, message writing, message center operation, communication security, signal supply and maintenance, communication systems for FA, AAA, and SCA battalions. *Texts:* FM 6 101, FM 7-24, C1; FM 24-17, C1; FM 24-20, C1; CCBP 3-2, C1; TM 11-469.

20-10 Basic Electricity. Electrical fundamentals including definitions, Ohm's Law, batteries, DC circuits, magnetic phenomena, AC inductance, capacitance, impedance, meters, and measurements. *Texts:* TM 1-455.

20-11 Recognition of Artillery Targets. Principles of target recognition, characteristics of standard artillery targets to include land, sea, and air; methods of recognition, and recognition training. *Texts:* FM 21-80.

20-12FA Firing Battery. Organization; duties of individuals in preparation for firing; control of fire at the battery position. *Texts:* FM 6-40, C1, 2; FM 6-140, FT 105-H-3, C8, 9, 10.

20-13FA Conduct of Observed Fire—I. Range-bracketing procedure and time fire. *Texts:* FM 6-40, C1, 2; FT 105-H-3, C8, 9, 10.

20-14FA Conduct of Observed Fire—II. Deflection-bracketing procedure. *Texts:* FM 6-40, C1, 2; FT 105-H-3, C8, 9, 10.

20-15AAA AAA Materiel—Guns. Characteristics and description of AAA guns, description and functioning of gun and mount. *Texts:* TM 9-372, C1.

20-16AAA AAA Materiel—Automatic Weapons. Characteristics and description of AAA automatic weapons, description and functioning of gun and mount. *Texts:* TM 9-223, TM 9-252, C1; TM 9-757.

20-17AAA AAA Basic Gunnery. Elements of data, methods of position finding and speed prediction, differential effects, AAA firing tables and trajectory charts, M1 slide rule, solution of triangles. *Texts:* FM 4-110, C1; FM 44-11.

20-18SC Seacoast Artillery Materiel. Care, maintenance and functioning of seacoast materiel including power plants; submarine mines; data computers, and transmission systems; demolitions. *Texts:* FM 4-7, FM 4 15, C1. 2; FM 4-30, FM 4-32, C1; FM 44-38, TM 9-669.

20-19SC Seacoast Artillery Fire Control and Position-Finding Systems. Principles of position-finding systems, timing, plotting boards and deflection board M1, range correction devices, vertical-base systems and instruments, stereoscopic range finder, radar position-finding systems, gun data computers. *Texts:* FM 4-15, C1, 2; TM 44-250.

20-20SC Seacoast Artillery Gunnery — I. Seacoast Artillery firing tables, problems relating to positions, spotting, pointing, landward firing for fixed seacoast artillery. *Texts:* FM 4-10, C1; FT 155-S-2, C7, 8, 9.

20-21FA Air Navigation (*For FA pilots only*). Principles of navigation applicable to light aviation. *Texts:* TM 1-205, C1.

LEGEND

Subcourses are either common, or common artillery, subjects unless the subcourse number is followed by letters indicating otherwise.

FA — Indicates Field Artillery subjects

AAA—Indicates Antiaircraft Artillery subjects

SC—Indicates Seacoast Artillery subjects

30 SERIES

30-1 Administration—II. Administration of the company to include correspondence and records. *Texts:* TM 12-253, C1, 2; TM 12-256, C1, 2; TM 14-502, C1, 2, 3; TM 20-221; AR's 210-50, 345-5, 345-25, 345-400, 345-415, 600-550, 600-115, 615-5, 615-200, 615,300, 615-360.

30-2 Training Management. Estimate of the training situation, directives, programs, schedules, preparation of field exercises, supervision of training. *Texts:* FM 21-5, TM 21-250, C1.

30-3 Terrain Evaluation. Influence of corridors and cross compartments in determining boundaries, aids to the study of terrain and determination of key terrain features, tactical study of terrain with emphasis upon artillery operations; special problems applicable to FA, AAA, and SCA. *Texts:* Special Texts.

30-4 Artillery Survey. The use of survey equipment, basic survey equipment, basic survey operations; establishing and extending survey control (including astronomical orientation); survey computations; survey plans and procedures. *Texts:* FM 6-40, C1, 2; TM 6-240, TM 20-230, Errata Sheet.

30-5 Principles of Infantry Tactics—II. Organization and tactical employment of the infantry battalion to include advance guard, attack, defense, outpost; cooperation with tanks, functions of the artillery liaison officer and forward observers. *Texts:* FM 7-20, FM 6-101, FM 6-135.

30-6 Hasty Field Fortifications and Obstacles. Mines and booby traps, entrenchments and emplacements, obstacles, camouflage, clearing, dummy works, technique of constructing field fortifications appropriate to the tactical situation. *Texts:* FM 5-15, FM 5-20, FM 5-31, C1 to 18 incl; Attached Memoranda, for special needs of AAA and SCA.

30-7 Troop Movements and Bivouac. Movement of an artillery battalion and battery overland and by rail; plans, reconnaissance, orders, march rates, and time and space factors; organization of the march column and antiaircraft protection; reconnaissance and procedure for movement into and out of bivouac. *Texts:* FM 6-105, FM 25-10, C1, 2, 3; TM 9-2854.

30-8 Artillery Intelligence. Sources of intelligence; employment of intelligence agencies; counterintelligence measures; collection, evaluation, interpretation, and dissemination of information. *Texts:* FM 6-130, FM 30-5, FM 448.

30-9 AAA Tactics—General. General organization and missions of AAA; characteristics of weapons, control of fire, use of screening smoke; employment in rear areas, in combat zone, and against land and naval targets; AAA defense plan; communications. *Texts:* FM 4-100, FM 3-50, C1; FM 44-8.

30-10FA Field Artillery Signal Communications. Duties of communication personnel; division artillery and FA regimental communication systems; communication systems in displacements, in the attack, and in the defense. *Texts:* FM 7-24, C1; FM 6-101, FM 24-17, C1; TM 6-605.

30-11FA Fire-Direction Procedure—I. Map data, determination and application of corrections. *Texts:* FM 6-40, C1, 2; TM 9-524, TM 20-230, Errata Sheet; FT 105-H-3, C8, 9, 10.

30-12FA Map and Aerial Photograph Reading for Field Artillery. Advanced study of aerial photographs and photomaps with special emphasis upon field artillery use. *Texts:* FM 6-40, C1, 2; FM 21-26, TM 5-230.

30-13FA Conduct of Observed Fire—III. Miscellaneous observed fires. *Texts:* FM 6-40, C1, 2; TM 9-524, FT 105-H-3, C8, 9, 10.

30-14FA Fire-Direction Procedure—II. Observed fire charts, fire-direction center procedure. *Texts:* FM 6-40, C1, 2; FT 105-H-3, C8, 9, 10.

30-15AAA Electronics. Introduction to radio fundamentals, resonant circuits, vacuum tubes, rectifiers, filter circuits, amplifiers and oscillators. *Texts:* TM 11-455; TM 11-466.

30-16AAA Employment of AAA Radar. Characteristics and capabilities of radar, principles of sighting and operation, cabling and associated equipment, operation and checks, maintenance responsibilities, jamming and countermeasures, IFF equipment. *Texts:* FM 44-45, FM 4-144, C1, 2.

30-17AAA Fire Control—AAA Guns. Description, emplacement, checks and adjustments, operation, maintenance of AAA directors and allied power plants and cabling systems, orientation and synchronization of the AAA battery. *Texts:* FM 44-38, TM 9-671, C1.

30-18AAA Advanced Gunnery—AAA Guns. Classes and types of fire; O_y, O_z, O_3 data; computation of ballistic corrections; computation of firing data; application of corrections; trial fire to include radar spotting; calibration fire; computation and application of trial fire and calibration fire corrections; verification fire; terrestrial fire. *Texts:* FM 4-110, C1; FT 90-AA-B-3, C4, 5, 6; FT 4.7-AA-C1, C2.

30-19AAA AAA Advanced Gunnery and Fire Control, Automatic Weapons. Slant plane gunnery; tracer information; synchronization, orientation, and operation of fire-control equipment; trial fire; terrestrial fire. *Texts:* FM 44-11, FM 44-51.

30-20SC Employment of Seacoast Radar. Characteristics and capabilities of radar, principles governing the location, operation, and employment of radar sets in surveillance and fire control; cabling and associated equipment, maintenance, jamming, and countermeasures. *Texts:* TM 11-467, TM 11-1324, TM 11-1366; C1; CATB.

30-21SC Seacoast Artillery Communication. Fixed SCA fire-control communication system, cable installations, time-interval systems, switchboards, mobile seacoast artillery fire-control equipment and systems, signal orders, SOI, duties of communication personnel. *Texts:* FM 24-16, FM 24-17, C1; WD TC No 43 (As Atchd Memo).

30-22SC Orientation for Seacoast Artillery. Elementary astronomy, approximate azimuth and determination, stellar observation, solar observation. *Texts:* TM 44-225, C1, 2; The 1947 American Nautical Almanac.

30-23SC Seacoast Artillery Gunnery—II. Errors and probability; dispersion; calibration; adjustment of fire to include magnitude, bracketing and ladder methods; lateral adjustment, adjustment methods for anti-motor-torpedo-boat batteries. *Texts:* FM 4-10, C1; FM 4-15, C1, 2; FT 6-C-2, FT 155-S-2, C7, 8, 9; FT 16-E-1.

30-24SC Preparation and Conduct of Fire; Records. Preparation for firing; safety precautions; commands; range section drill procedures; gun section drill procedures; reports, records, and forms. *Texts:* FM 4-15, C1, 2; FM 4-20, C1, 2; FM 4-86, C1; TM 4-245.

30-25SC Elementary Tactics for Seacoast Artillery. Mission of Seacoast Artillery, naval targets and effect of SCA thereon, tactical employment of harbor defense, tactical employment of mobile SCA, tactical empowment of surveillance aids, intelligence, security, commands and orders, supply and evacuation, organization of small harbor defense. *Texts:* FM4-5.

30-26FA FA Meteorology (*For FA Obsn officers only*). Mission, organization, and employment of the ballistic meteorologic station in a field artillery observation battalion; theory of the metro messages for artillery and sound ranging; visual methods, equipment, and data; radio direction finder, equipment, and data; radiosonde equipment and data; plotting, computations, and evaluation of records necessary to obtain metro message for field artillery and sound ranging. *Texts:* FM 6-120, TM 20-240.

30-27FA Meteorology for Light Aviation (*For pilots only*). Principles of meteorology applicable to light aviation. *Texts:* TM 1-230.

30-28AAA Flak Analysis (*Elective*). Employment and preparation of flak computer for graphical analysis of AAA gun defenses; uses of flak computers; measures for avoiding flak damage. *Texts:* TM 4-260.

30-29AAA Statistical Research and Analysis (*Elective*). Basic principles of statistical analysis as used in preparation and evaluation studies and as used in gun and automatic weapons research. *Texts:* None approved.

40 SERIES

40-1 Map and Aerial Photograph Reading—III. Review of basic and intermediate map reading; types, grids, scales, and additional applications to foreign maps; review of aerial photograph reading, photo interpretation. *Texts:* FM 21-26, FM 30-21.

40-2 Rules of Land Warfare. Principles of land warfare including status of persons, conduct of hostilities, etc. *Texts:* FM 27-10, C1.

40-3 Military Government. Military government procedure. *Texts:* FM 27-5.

40-4 Combat Intelligence—III. Intelligence and counterintelligence agencies in the division; functions of G-2 including coordination with other staff members; G-2 records and reports; G-2 plan; G-2 estimates; G-2 annex; terrain studies; employment, use, and administration of special teams; counterintelligence to include security, secrecy, discipline, deceptive measures, prevention of sabotage and espionage, screening road movements of personnel. *Texts:* FM 30-5, FM 30-15, FM 30-25, C1, 2; FM 30-21.

40-5 Employment of Guided Missiles. Development of guided missiles warfare, principles of guided missiles warfare; capabilities and limitations of guided missiles, and their use and effectiveness. *Texts:* Attached Memoranda.

40-6 Principles of Infantry Tactics—III. Organization of the infantry regiment; the infantry regiment on the march, approach march, attack and defense; joint planning of fires by infantry commanders, field artillery battalion commanders, artillery liaison officers, and forward observers. *Texts:* FM 7-40, C1, 2; FM 6-101, FM 6-135.

40-7 Staff Functions. Organization and functions of the staff of an artillery battalion, command post operations, staff records, reports. *Texts:* FM 6-40, C1, 2; FM 6-101, FM 101-5, C1 to 4 and 6 to 10 incl.

40-8 Operation Orders. Types of orders, technique of preparation, artillery battalion and battery orders. *Texts:* FM 6-20, FM 101-5, C1 to 4 and 6 to 10 incl.

40-9 Supply in Combat. Definitions, organization for supply, duties of S-4 in combat to include procurement methods and procedure, ammunition supply. *Texts:* FM 6-101, FM 100-10, C1, 2, 3; FM 101-5, C1 to 4 and 6 to 10 incl.

40-10 Field Artillery Tactics, General. Organization of division artillery and higher echelons, artillery terms; characteristics of field artillery, principles of field artillery tactics, types of artillery fire, methods of employment. *Texts:* FM 6-20, FM 6-40, C1, 2; FM 6-101, FM 6-105, FM 6-130.

40-11 RSOP. Principles governing the reconnaissance, selection, and occupation of position by a FA, AAA, and SCA battalion; organization of position including camouflage and local defense. *Texts:* FM 4-5, FM 4-100, FM 6-20, FM 6-101, FM 6-105.

40-12FA Self-Propelled Artillery. Organization, capabilities, and limitations of self-propelled artillery; artillery support of armor; control of tanks in reinforcing artillery roles. *Texts:* FM 6-76, FM 6-82, FM 6-105.

40-13FA FA in Offensive Action. Employment of light and medium artillery battalions in offensive action, including meeting engagement, attack of a position, and pursuit. *Texts:* FM 6-20, FM 6-101.

40-14FA FA in Defensive Action. Employment of the field artillery battalions of a division in defense, retrograde movements, and counter-effensive. *Texts:* FM 6-20, FM 6-101.

40-15FA Employment of Light Aviation—Ground Units. Tactics and technique of employment of ground forces light aviation. *Texts:* FM 20-100.

40-16AAA AAA Gun Battalion. Organization, administrative and tactical functions, protection of an objective, relationship of the battalion to its batteries and to higher echelons. *Texts:* FM 4-100, FM 44-4, FM 101-5, C1 to 4 and 6 to 10 incl.; FM 101-10.

40-17AAA AAA Automatic Weapons Battalion. Organization, administration and tactical functions, tactical employment, relationship of the battalion to its batteries and to higher echelons. *Texts:* FM 4-100, FM 44-2.

40-18AAA AAA in Ground Support. AAA tactics and technique in a ground support role; gunnery, spotting, and fire adjustment procedures; siting of guns and automatic weapons for direct and indirect laying; command and coordination channels to include operation of the FDC; use against naval vessels. *Texts:* FM 4-110, C1; FM 4-121, C1; FM 6-40, C1, 2; FM 44-11, FM 44-51.

40-19AAA AWS, AAIS, and AAOR. Organization, functions, principles and operation of the warning system of AAA; sources of information, manner and form of dissemination. *Texts:* FM 44-8.

40-20SC Seacoast Artillery Alternate Methods of Fire Control. Principles of alternate methods of fire control, one-station fire-control system, central system, gun commander's control, stand-by fire control for 90-mm guns, air observation of fire. *Texts:* FM 4 10, C1.

40-21SC Target Practice Analysis. Drill and drill analysis, conduct of seaward practice, analysis of service practice and reports, problems. *Texts:* TM 4-235, C1.

40-22SC Tactics and Technique of Controlled Submarine Mines. Organization of mine command; establishment of mine defense; protection of mine fields, mine materiel, installations, and mine flotilla; preparation for mine planting, planting and maintenance of a mine field; operation of a controlled submarine defense; conduct of mine target practice, underwater detection. *Texts:* FM 4-7, TM 4-235, C1.

40-23SC Searchlights. Organization; materiel; employment. *Texts:* FM 4-29.

40-24FA Sound and Flash Ranging (*For FA Obsn officers only*). Missions, organization, and tactical employment of the field artillery observation battalion; survey principles for corps artillery; sound and flash ranging; theory and principles of sound and flash ranging. *Texts:* FM 6-120.

50 SERIES

50-1FA Division Artillery in Offensive Action. General principles of offensive action with emphasis upon the artillery role; a continuing map exercise which illustrates all phases of the division artillery in offensive action to include operation orders, planning of fires and forward displacements. *Texts:* FM 6-20, FM 6-100, FM 6-101, FM 21-30, C1, 2, 3, FM 100-5, FM 101-5, C1 to 4 and 6 to 10 incl.

50-2FA Division Artillery in Defensive Action. General principles of defensive action with emphasis on the artillery role; a continuing map exercise which illustrates all phases of the division artillery in defensive action to include operation orders, occupation and organization of position, planning of defensive fires, and rearward displacements. *Texts:* FM 6-20, FM 6-100, FM 6-101, FM 21-30, C1, 2, 3, FM 100-5, FM 101-5, C1 to 4 and 6 to 10 incl.

50-3FA Corps and Army Artillery. Composition and employment of corps and army artillery to include firing plan and counterbattery functions of nondivisional artillery. *Texts:* FM 6 20, FM 6-100, FM 6-130.

50-4FA Artillery with the Corps in Offensive Action. Organization for combat and fire planning, including counterbattery for all artillery with the corps in the attack. *Texts:* FM 6-20, FM 6-101, FM 6-130.

50-5FA Artillery with the Corps in Defensive Action. Organization for combat and planning fires for defense and retrograde movement. *Texts:* FM 6-20, FM 100-5.

50-6AAA AAA Brigade, Group and their Staffs. Organization and operation of the group and brigade, their administration and tactical functions; joint and separate employment including appropriate assignments for each operation with the field forces and with an air defense command. *Texts:* FM 4-100, FM 101-5, C1 to 4 and 6 to 10 incl.

50-7AAA AAA with Division, Corps, and Army. Administration and tactical functions in AAA in forward areas, relationship to supported units, priorities for defense, command and coordination, basis of allocation of antiaircraft units to the army and component units. *Texts:* FM 4-100, FM 44-2, FM 44 4.

50-8AAA AAA Target Practice Analysis. Instructions governing the conduct of AAA target practice, analysis of target practice, and target practice reports. *Texts:* TM 44-234.

50-9SC The Harbor Defense Command. The Harbor Defense project: organization, staff and staff duties, fort and group commanders; records; relation to adjacent forces. *Texts:* AR 90-40 C1; AR 90-50; FM 4 5, FM 101-5, C1 to 4 and 6 to 10 incl.; TM 4-245.

50-10SC Operations of CP's and Operation Rooms. Organization and operation of harbor defense group, battalion and battery command posts, and manning personnel and their duties; organization and operation of the harbor entrance control post. *Texts:* FM 4-5, FM 44-8.

50-11SC Tactics of Seacoast Artillery. Control and coordination of seacoast artillery; surveillance and illumination plans; coordination of fires; tactical problems in anti-motor-torpedo-boat defense; tactical employment of mobile artillery, and harbor defense; local security; destruction of materiel. *Texts:* FM 4-5, FM 30-5, FM 101-5, C1 to 4 and 6 to 10 incl.

50-12SC Seacoast Artillery Gunnery. A review of coast artillery gunnery to include theory of position finding, ballistics and firing tables, pointing, calibration, spotting errors, probability and dispersion, adjustment of fire. *Texts:* FM 4-10, C1; FM 4-15, C1, 2; FT 6-C-2, FT 155-S-2, C7, 8, 9; FT 16-E-1.

APPENDIX I—STATUS OF SUBCOURSES

Section I—Subcourses Printed

20-Series

20-1 Map and Aerial Photograph Reading—II
20-2 Methods of Instruction
20-3 Military Law—Courts Martial
20-4 Field Artillery Materiel (to become Common Artillery 20-6, upon revision)

30-Series

30-1 Administration—II
30-2 (FA) Training Management
30-2 (AAA) Training Management
30-2 (SC) Training Management
30-3 (FA) Terrain Evaluation (to become Common Artillery)
30-3 (AAA) Electronics (to become 30-15 AAA)
30-3 (SC) Terrain Evaluation (to become Common Artillery)
30-6 (FA) Combat Supply, Field Artillery Battalion (to be combined with 40-9, as Common Artillery, 40-9 upon revision)
30-27 (FA) Meteorology for Light Aviation

40-Series

40-1 Map and Aerial Photograph Reading—III
40-2 Rules of Land Warfare
40-7 (FA) Staff Functions (to become Common Artillery upon revision)
40-7 (SC) Tactics for Seacoast Artillery (to be combined with 50-1 (SC) as 50-11 (SC) upon revision)
40-9 (FA) Supply in Combat (to become Common Artillery upon revision)

50-Series

50-1 (FA) Division Artillery in Offensive Action
50-1 (SC) Tactics of Seacoast Artillery (to be combined with 40-7 (SC) as 50-11 (SC) upon revision)
50-2 (FA) Division Artillery in Defensive Action
50-3 (FA) Corps and Army Artillery

60-Series

60-1 (SC) Seacoast Artillery Gunnery (to become 50-12 (SC) upon revision)

Section II—Printing Prospectus

20 Series

20-7 Principles of Infantry Tactics—I	1 Nov 47
20-8 Basic Artillery Gunnery	15 Dec 47
20-10 Basic Electricity	15 Aug 47
20-12 Firing Battery	15 Aug 47
20-13 Conduct of Observed Fire—I	15 Nov 47
20-14 Conduct of Observed Fire—II	1 Dec 47

30-Series

30-3 (AAA) Terrain Evaluation	1 Aug 47
30-7 Troop Movements and Bivouac	15 Oct 47
30-11 (FA) Fire Direction Procedure—I	25 Aug 47

30-12 (FA) Map and Aerial Photograph Reading for Field Artillery	1 Aug 47
30-18 (AAA) Advanced Gunnery—AAA Guns	15 Nov 47
30-20 (SC) Employment of Seacoast Artillery Radar	15 Jul 47
40-Series	
40-10 Field Artillery Tactics, General	1 Sep 47
40-11 RSOP	1 Dec 47
40-15 Employment of Light Aviation—Ground Units	15 Sep 47
40-24 (FA) Sound and Flash Ranging	20 Jul 47
50-Series	
50-6 (AAA) The AAA Brigade, Group and their Staffs	1 Aug 47

APPENDIX II—REQUIRED SUBCOURSES

Section I—Subcourses Required for Award of Certificate of Completion in Field Artillery Subjects

20-Series

20-1 Map and Aerial Photograph Reading—II
20-2 Methods of Instruction
20-3 Military Law—Courts Martial
20-4 Mess Management
20-5 Motor Vehicles; Operation and Maintenance
20-6 Artillery Materiel and Ammunition
20-7 Principles of Infantry Tactics—I
20-8 Basic Artillery Gunnery
20-9 Basic Artillery Communication
20-10 Basic Electricity
20-11 Recognition of Artillery Targets
20-12 (FA) Firing Battery
20-13 (FA) Conduct of Observed Fire—I
20-14 (FA) Conduct of Observed Fire—II
20-21 (FA) Air Navigation (for Field Artillery pilots only)

30-Series

30-1 Administration—II
30-2 Training Management
30-3 Terrain Evaluation
30-4 Artillery Survey
30-5 Principles of Infantry Tactics—II
30-6 Hasty Field Fortifications and Obstacles
30-7 Troop Movements and Bivouac
30-8 Artillery Intelligence
30-9 AAA Tactics, General
30-10 (FA) Field Artillery Signal Communication
30-11 (FA) Fire Direction Procedure—I
30-12 (FA) Map and Aerial Photograph Reading for Field Artillery
30-13 (FA) Conduct of Observed Fire—III
30-14 (FA) Fire-direction Procedure—II
30-26 (FA) Field Artillery Meteorology (for Observation Battalion Officers only)
30-27 (FA) Meteorology for Light Aviation (for Field Artillery pilots only)

40-Series

40-1 Map and Aerial Photograph Reading—II
40-2 Rules of Land Warfare
40-3 Military Government
40-4 Combat Intelligence
40-5 Employment of Guided Missiles
40-6 Principles of Infantry Tactics—III
40-7 Staff Functions
40-8 Operation Orders
40-9 Supply in Combat
40-10 Field Artillery Tactics, General
40-11 RSOP
40-12 (FA) Self-Propelled Artillery
40-13 (FA) Field Artillery in Offensive Action
40-14 (FA) Field Artillery in Defensive Action
40-15 (FA) Employment of Light Aviation—Ground Units
40-24 (FA) Sound and Flash Ranging

50-Series

50-1 Division Artillery in Offensive Action
50-2 Division Artillery in Defensive Action
50-3 Corps and Army Artillery
50-4 Artillery with the Corps in Offensive Action
50-5 Artillery with the Corps in Defensive Action

Section II—Subcourses Required for Award of Certificate of Completion in AAA Subjects

20-Series

20-1 to 20-11 incl., plus:
20-15 (AAA) AAA Materiel—Guns
26-16 (AAA) AAA Materiel—Automatic Weapons
20-17 (AAA) AAA Basic Gunnery

30-Series

30-1 to 30-9 incl., plus:
30-15 (AAA) Electronics
30-16 (AAA) Employment of AAA Radar
30-17 (AAA) Fire Control—AAA Guns
30-18 (AAA) Advance Gunnery—AAA Guns
30-19 (AAA) Advance Gunnery—AAA Automatic Weapons

40-Series

40-1 to 40-11 incl., plus:
40-16 (AAA) AAA Gun Battalions
40-17 (AAA) AAA Automatic Weapons Battalion
40-18 (AAA) AAA in Ground Support
40-19 (AAA) AWS, AAIS, and AAOR

50-Series

50-6 (AAA) AAA Brigade, Group and their Staffs
57-7 (AAA) AAA With Division, Corps, and Army
50-8 (AAA) AAA Target practice and Analysis

Section III—Subcourses Required for Award of Certificate of Completion in SCA Subjects

20-Series

20-1 to 20-11 incl., plus:
20-18 (SC) Seacoast Artillery Materiel
20-19 (SC) SCA Fire Control and Position Finding Systems
20-20 (SC) SCA Gunnery—I

30-Series

30-1 to 30-9 inc., plus:
30-20 (SC) Employment of Seacoast Radar
30-21 (SC) Seacoast Artillery Communication
30-22 (SC) Orientation for Seacoast Artillery
30-23 (SC) Seacoast Artillery Gunnery—II
30-24 (SC) Preparation and Conduct of Fire
30-25 (SC) Elementary Tactics for SCA

40-Series

40-1 to 40-11 incl., plus:
40-18 (AAA) AAA in Ground Support
40-20 (SC) SCA Alternate Methods of Fire Control
40-21 (SC) Target Practice and Analysis
40-22 (SC) Tactics and Technique of Controlled Submarine Mines.
40-23 (SC) Searchlights

50-Series

50-3 (FA) Corps and Army Artillery
50-9 (SC) The Harbor Defense Command
50-10 (SC) Operations of Command Posts and Operations Room
50-11 (SC) Tactics of Seacoast Artillery
50-12 (SC) Seacoast Artillery Gunnery

NOTICE OF ANNUAL MEETING, U. S. FIELD ARTILLERY ASSOCIATION

In compliance with Article VII, Section 1, of the Constitution, notice is hereby given that the Executive Council has fixed 5:30 P. M. Monday, December 15, 1947, as the time of the annual meeting of the Association to be held at the Army and Navy Club, 1627 Eye St., N. W., Washington, D. C.

The business to be disposed of will be the election of six members of the Executive Council (three Regular Army, two National Guard, and one Organized Reserve), and the transaction of such other business as may properly come before the meeting. Nominations may be made by proxy, or from the floor of the meeting.

Civil War Saga

HOUSE DIVIDED By Ben Ames Williams. 1532 *pages. Houghton-Mifflin Co.* $5.00

Ben Ames Williams has described himself as "a large, calm man who likes first of all to write—." This is no understatement as witness some thirty books and over five hundred magazine articles bearing the stamp of his prolific pen. Despite all of his previous works, the reading of *House Divided* gives the impression that the writing of this book has been the author's principal goal. Such a magnificent, monumental and gargantuan job could not be other than a labor of love.

Mr. Williams has long been thought of as a "Down-easter," a Maine man. Actually, he was born in Mississippi and is a grandnephew of James Longstreet of Civil War fame. His great love of the outdoors led him to Maine and he has used his Northern surroundings as the locale of many of his books and stories. For *House Divided* however, he returns to his native South and his Civil War heritage.

Essentially, *House Divided* is the story of the Currain family during the Civil War period and uses Virginia as the locale. The widely divergent personalities and lives of these three brothers and two sisters provide the framework of the story. The excellent supporting cast of characters receive the same fine treatment accorded the principals.

House Divided compares with *Gone With The Wind* in size, locale and period but there the resemblance ends. In detail, historical fact, characterization and overall excellence *House Divided* surpasses the best efforts of Mrs. Mitchell in *GWTW*.

Without impugning the piously-held "honor" of the South, Mr. Williams tears away the veil of traditional magnolia glamor and reveals the Civil War South in the embittered nakedness of a people of war. Gone are the beautiful flower gardens so aptly suited to the enjoyment of a refreshing mint julep and in their stead we see hastily planted utilitarian vegetable gardens. The privations, discomforts and sheer grief imposed upon all classes in time of war lay even more heavily on the gentle "planter" class because for many of them it marked their first experience with the rigors of self-reliant life. Ben Ames Williams has made the most of this facet of internal Southern turmoil.

Students of American history will be delighted with the presentation of the machinations that lead to war. No attempt is made to place the blame for the outbreak but there is a close scrutiny of Southern public opinion on the issue. The Southern view of the Lincoln Administration is skillfully interwoven into the plot and Mr. Lincoln himself plays a brief but important role. John Wilkes Booth comes in for more attention than is usually given him in history. The treatment accorded the Confederate Generals interjects a *Lee's Lieutenants'* atmosphere from time to time.

Everywhere evident is the tremendous amount of painstaking research that has gone into making this more than just another historical novel. Mr. Williams has made little use of literary license. For instance, his description of the Battle of Gettsburg is over 60,000 words long and in factual accuracy compares with the purely historical works on that battle.

Mr. Williams has demonstrated a remarkable facility for making the reader live the story. The resultant man-on-the-street approach to history is one of the outstanding features of the book. The author is to be further congratulated for avoiding the constant use of sexual situations that has become so widely prevalent in current novels.

Fifteen hundred odd pages is a lot of book but don't let that intimidate you. Once you have started reading *House Divided,* you will lay it aside reluctantly. Most readers will agree that the reading time was well spent and that Ben Ames Williams deserves a vote of thanks for a superb writing accomplishment.

R. F. C.

Walpurgisnacht

THE LAST DAYS OF HITLER, by H. R. Trevor-Roper. 254 pp. The Macmillan Company. $3.00.

By K. S. Giniger

The most amazing thing about H. R. Trevor-Roper's *The Last Days of Hitler* is that it is not fiction. For the story of the bunker in Berlin where the leaders of the Third Reich went down to a flaming destruction and carried their country with them is fantastic enough to make its truth hardly credible.

Yet it is truth and no fiction and the investigation which H. R. Trevor-Roper made for British Army intelligence agencies seems to lay for all time the rumor that somewhere in a cellar or in a mountain fastness Adolf Hitler yet lives waiting for his time to come again. The facts and testimony are carefully marshaled to provide almost incontrovertible evidence that Der Fuehrer and Eva Braun, Frau Fuehrer for a brief moment of history, killed themselves or each other and were burned and buried shortly thereafter.

It is in assembling this evidence and telling the story of the events which led to the suicide scene that the Wagnerian pattern of Trevor-Roper's story becomes impressive. This *Walpurgisnacht* played

CURRENT and CHOICE

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Dark December
By Robert Merriam — $3.00

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By Agnes Newton Keith — $3.00

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By Joshua Liebman — $2.50

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By Pierre Lecomte de Nouy — $3.50

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FICTION ...

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By C. S. Forester — $2.50

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By Laura Hobson — $2.75

The Vixens
By Frank Yerby — $2.75

U. S. FIELD ARTILLERY ASSN.
1218 Connecticut Avenue
Washington 6, D. C.

out in blood and thunder, in deceit and suspicion, gives us our best and most complete picture of Hitler and the men around him. Almost, at times, it seems to take on the qualities of *Alice in Wonderland,* with Hitler as the Duchess shouting "Off with their heads!" and little or nothing resulting. Trevor-Roper pictures the intimate group of the Nazi hierarchy as a court in the medieval sense rather than a political group; hence intrigue and jealousy play a greater part than any political ideologies.

The relationship of Hitler to the Reichswehr and to his generals and admirals is fully discussed and Mr. Trevor-Roper's interrogations of various war prisoners and war criminals lead him to some very valuable observations on the abilities of Hitler and his generals as tacticians and strategians. *The Last Days of Hitler* is an important book—it tells us how men act and move without reason and without logic to fearsome ends.

Troopship Handbook

TROOPSHIPS OF WORLD WAR II. By Roland W. Charles. 352 pp. Appendices. Index. Illustrated. The Army Transportation Association. $3.25.

By Col. John E. Coleman, FA-Res.

In an attractive, well-illustrated, yet compact volume Mr. Charles gives an excellent thumb-nail account of the shipping which carried U. S. troops overseas in World War II. Casual vessels have been omitted, but his aim was to include all which made more than one overseas troop-carrying trip from the continental United States. Thus Navy attack transports are not found here, nor those Liberty ships that were hastily outfitted in the Pacific to bring home single loads of troops after the end of hostilities.

Purpose of the book, as stated by its author, is "(1) to form a compact permanent record of certain troopship information that is now scattered . . . , (2) to assemble for ready reference essential technical data . . . . (3) to make available to those personally interested, a brief story of any particular ship."

This aim has been met, and far from in the dry-as-dust way that the quoted statement suggests. For each ship are given a good photograph, basic dimensions, etc., time and place of construction with name of builder, former name, pre-war operator, and a summary of its war service. A general index permits ready reference to any ship, within the six major groupings of Army Troopships, Navy Troopships, War Shipping Administration Troopships (U. S. Registry), WSA Troopships (Foreign Registry), British-Controlled Troopships, and Army Hospital Ships.

Additional data is collected in the appendices. First is a general statement of the work incident to conversion of troopships. A definition of terms is useful to the landlubber. There are lists of Army Inter-Island Troopships, Fully-Converted Liberty Ships, Victory Troopship Conversions, Liberty Type Troopships, and sundry other types. The bibliography will be found useful by those wanting to pursue the general subject further. And an excellent gazetteer gives the location (latitude and longitude) of places mentioned in the book.

The author hopes to follow this work with an informal sequel recounting the spectacular, important, or merely humanly-interesting events that occurred on our many troopships during the war. On the basis of his first effort, that book will be as delightful as this one is useful and interesting.

Eulogy of a Dad

FATHER AND THE ANGELS, by William Manners. 224 pp. E. P. Dutton & Co. $2.75.

By Lt. L. H. Christie, USNR

This is a leisurely book, the rambling recollections of a midwest boyhood. Modestly, yet appropriately, Bill Manners makes his father the hero of this first part of his autobiography.

This father not only loomed large in the life of his son: he was the dominant figure of a large, city congregation, and the son was often reminded of his duty to set a good example. Bill did not always succeed; quite the contrary.

The result is the picture of a generous relationship, full of affection and

admiration on the son's part, and in which the unworldly father even went so far as to interest himself in his son's brief but successful career as a lightweight professional boxer.

Anecdotes of the family, the congregation, and the boys' world of Zanesville, Ohio, not so many years ago make up the bulk of this entertaining and amiable book. It will probably produce a touch of nostalgia, it will certainly introduce a gallery of amusing characters to the reader.

Maugham Omnibus

CREATURES OF CIRCUMSTANCE. By W. Somerset Maugham. 314 pp. Doubleday & Co., Inc. $2.75.

By Jean M. Coleman

Fifteen short stories written by Mr. Maugham from 1934 to 1946. Fifteen stories as varied in locale, characters, and situations as anyone could ask for. There is a surprise in almost every story—well led up to and well told.

Mr. Maugham, the storyteller, may be in France, in Spain, in the Far East. He may meet someone in a midwest American town and suddenly be reminded of a story which happened long ago in Rome, as in "A Woman of Fifty."

One has the feeling that he watched each story unfold and that he wants the reader to be as interested in it as he is.

If you are tired of the run-of-the-mine magazine story, the story that you know will remain "pat" from start to finish, try the new Maugham book. Even if you have read one or two of the stories in magazines, you'll enjoy rereading them. Their freshness will make you wish that there were more than fifteen.

Nazi Ingenuity

GERMAN RESEARCH IN WORLD WAR II. By Colonel Leslie E. Simon, OD. 218 pages. Illustrations. Index. Wiley and Sons. $4.00.

By Richard Gordon McCloskey

Baxter's *Scientists Against Time* tells the story of Allied science in the war. Simon's book follows the other by six or seven months and tells the German story. My impression from comparing these two very important books is that the Allies were much better at producing than devising new equipment, and that the Germans were way ahead in developing new weapons and methods, but failed lamentably when it came to coordinating the work of their many scientific and engineering agencies.

The stupidest, and most frequent, rebuttal I have had to my constant claim that we have plenty to learn, scientifically and militarily, from the Nazis and Japs is, "Well, we won the war, didn't we?" Certainly we physically won the war, but the more I study it, the more I believe we overwhelmed the enemy by sheer weight of men and materiel, rather than by outfighting or outsmarting or outinventing or outdesigning them. Colonel Simon's book, by inference anyway, substantiates this, as does a forthcoming book by Colonel G. B. Jarrett on German tanks, and several other books on Axis materiel and methods that I know are in production.

Colonel Simon's book has circulated in War Department Research and Development, and I fervently hope it has been read. It is an important book, a very important book, and deserves to be read and reread, discussed and studied.

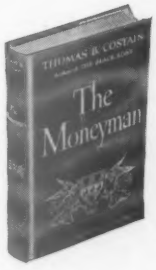
Costain's Current Success

THE MONEYMAN. by Thomas B. Costain. 434 pages. Doubleday & Co. $3.00

There will always be a market for stories of adventure and intrigue well-told. Thomas B. Costain is already well established as an author with a keen facility for telling such tales. His development in this line of writing can be readily traced through the crescendoing success of his previous works, *For My Great Folly, Ride With Me* and *The Black Rose.* In *The Moneyman,* he has surpassed his previous efforts.

This vivid and dramatic story is set in the court of King Charles VII of France during the Fifteenth Century. France at this time, had lost Joan of Arc and was entering the final stages of the Hundred Years War.

Jacques Coeur, the King's moneyman, was born a commoner and a man of considerable ability and cunning. As a



A superb new story of action and romance by the author who gave you THE BLACK ROSE . . .

■ Charles VII was king . . . The French courtiers were adroit conspirators, but the real power behind the throne was the king's mistress, Agnes Sorel. Into this tapestry of royal splendor came a new figure — Jacques Coeur, financial wizard, a commoner who rose to be the king's Moneyman, and whose life reached a climax in one of history's most dramatic murder trials. But not before he had carried on the work begun by Jeanne d'Arc, as his despised "bombards" succeeded in a single campaign against Rouen where a century of knighthood had failed in driving the English bowmen from the territory of France. "A story of rich romance, of high intrigue."—*Book-of-the-Month Club News.*

THE Moneyman

by THOMAS B. COSTAIN

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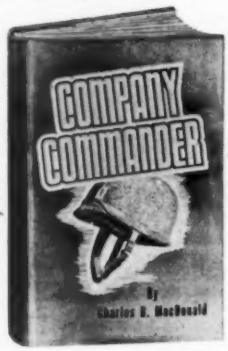
the simple, honest report on war by an infantryman — the best soldier-writing to come out of World War II—



COMPANY COMMANDER

BY CHARLES B. MACDONALD

Charles B. MacDonald came to the 2d Infantry Division as a replacement company commander in September, 1944 — and stayed with an infantry company (with time out for a wound and evacuation) for the rest of the war. COMPANY COMMANDER is his story—and by the time you've finished it, the men of Company I and Company G will be friends, and winter warfare an old experience of your own. But MacDonald can tell about his own story. In his preface, he says . . .

"The characters in this story are not pretty characters. They are not even heroic, if lack of fear is a requisite for heroism. They are cold, dirty, rough, frightened, miserable characters: GIs, Johnny Doughboys, dogfaces, foot-sloggers, poor bloody infantry, or as they like to call themselves, combat infantrymen. But they win wars.

"They are men from Companies I and G, 23rd Infantry, but they might be men from Companies A and K, 16th Infantry, or they might be men from Companies C and E, 254th Infantry. For their stories are relatively the same. Some may have fought the Germans longer than others, or some may have fought the Germans less. For all it was an eternity.

"The characters in my story are not fictional, and any similarity between them and persons living or dead is intentional, and some of them are dead.

". . . I am not the hero of my story.

"The heroes are the men from Companies I and G—the lead scouts, the riflemen, the machine-gunners, the messengers, the mortarmen, Companies I and G are also called rifle companies . . . and when you call a company a rifle company, you are speaking of the men who actually FIGHT wars."

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private citizen, he became one of the first of the wealthy merchant princes and amassed a tremendous private fortune. Since the proper maintenance of a King during time of war is a great strain on the nation's purse, it was only natural that the outstanding financier of the time should be called to the King's cabinet to help underwrite the monarch's livelihood.

Through the powerful influence of the King's mistress, Agnes Sorel, Coeur exerted considerable control over the conduct of the war and the affairs of state. This, in addition to the fact that many court members were in his debt, did little to heighten the popularity of the moneyman with the powers around the throne. Dramatic impetus is given the story through the efforts of Coeur to find a suitable replacement for Agnes Sorel whose health is failing.

Costain weaves an intricate plot interspersed with ample love, conspiracy and action. Though this type of novel can hardly be classed as a literary masterpiece, it is definitely fine entertainment. There will be little need to encourage the thousands who read *The Black Rose* to obtain and read *The Moneyman*. It is gratifying to report that their confidence has not been misplaced. The great success which *The Moneyman* is bound to enjoy gives mute testimony to the void that such writers as Mr. Costain fill in the reading public's search for good entertainment.

R. F. C.

Air Traffic Problems

THE RIGHT TO FLY. By John C. Cooper. 380 pp. Maps. Appendices. Bibliography. Index. Henry Holt and Co. $5.00.

By John R. Cuneo

This book calls attention to the generally overlooked relation between a nation's "right" to fly in the air space over its territory and its air power. It is concerned with topics of immediate importance: the impossibility of dividing civil from military aviation, the necessity of controlling the air space over conquered enemy nations, the over-all factors contributing to the air strength of nations and a general consideration of these factors in the cases of the Soviet Union, Western Europe (particularly Britain) and the United States.

The book wavers between a documentary study for students of the subject and a general text for the ordinary reader. Some of the elements accompanying studies of the former type—such as long quotations, over-pretentious presentation of material—will discourage many readers. However, anyone interested in factors affecting our military affairs should resist the temptation to put it aside for easier reading. It is an adult examination of a contemporary topic deserving everyone's attention.

Concentration Camp Horrors

FIVE CHIMNEYS. By Olga Lengyel. 212 pp. Ziff-Davis Co. $3.00.

By Ruth McKelway Scithers

The dramatic impact of this sensitive, thoughtful account of a Nazi concentration camp is the fact that many of these conditions still prevail in war-ravaged countries. The horror of the prisons is, in highly concentrated form, the horror of all slavery.

Olga Lengyel's father and husband were both well-known and distinguished surgeons, devoted to their work; but they had nothing to do with politics. They would not believe what was happening everywhere about them.

She recalls a conversation with a German officer, while her family was living peacefully in Transylvania. It sounds very much like some of the descriptions our officers are still bringing back. "Even when he spoke of the foes of terror — which blanketed Europe, we could not accept it — everywhere, he declared, the subject peoples gazed at him with eyes that brimmed with hatred. Yet from his family at home he received only complaints that he was not sending back enough loot! Other soldiers, privates and officers, were sending home so much more in jewelry, clothes, objects of art, and food."

Even when the author had been interned for sometime, she and her fellow-prisoners could not believe that the camp "bakery" was the crematory "to which the young and the old, and the sick had been consigned, and to which

ultimately we were all doomed."

And so it was, when she was faced with the shock of reality, at last, she developed a reason for living, "to dream and pray for the day to come when I could go free and tell the world 'This is what I saw with my own eyes. It must never be allowed to happen again.'"

Her surging, hopeful spirit uplifts the whole record. "Yet I saw many internees cling to their human dignity to the very end. The Nazis succeeded in degrading them physically, but they could not debase them morally."

Survey of Occupation

ONE LAST LOOK AROUND. By Clark Lee. 295 pp. Duell, Sloan & Pearce. $3.00.

By Col. John E. Coleman, FA-Res.

Before the war Clark Lee was a far-eastern correspondent. During it he pretty well toured the world's battlefields. Just after it he swung over the Pacific area for "One Last Look Around."

His jacket blurb describes Lee as "a man of passionate convictions." His book bears that out, with one qualification: Lee is obviously a congenital and complete "aginner," he likes nothing of any sort he has seen, and he offers nothing constructive whatsoever. The nearest he gets is in implying that all former colonies should at once be turned completely free, without realizing that where this has come about through one cause or another there have resulted civil war, strife between conflicting domestic groups, and a trend toward governments dominated by and controlled from Moscow.

Perhaps this is what Lee desires. Certainly, he is bitter against not only the incompetent and noisome citizens of sundry countries, but against those countries themselves. For instance, all Englishmen are so without merit in his estimation that he felt it quite proper to try to lure some aloof Britishers in Java into a bar-room fight he provoked; somehow, it seems, success in this venture would have been part payment of some obscure debt he owed the Empire!

Many of the facts he mentions have been printed elsewhere. Some here differ considerably, however, from earlier versions, and some (as in connection with Tojo's attempted suicide) have been repudiated specifically by others who were present and whom Lee quotes. If this book is read with one critical eye while the other is fastened upon the balance-wheel of established facts, one can gain a new perspective of events. It is not, however, a book to be taken at its apparent face value, by any means.

Novel of Post-War Bavaria

THE STEEPER CLIFF. By David Davidson. 341 pp. Random House. $3.00.

By Ruth McKelway Scithers

A novel, fresh right up to this minute, out of the American Military Government of Bavaria. The author has pictured things that the returning traveler finds hard to explain about Germany now—the wild hunger for cigarettes, chocolate, coffee; the ever-present black market and the acquisition of "bargains" from a defenseless people; the dirty web of lies and evasions among the conquered; the unrestrained and callous behavior of the conquerors; the whole unnatural, keyed-up, hysterical atmosphere.

The setting is among fairy-like castles, brightly painted, new Bavarian cottages built against ancient fortresses and all tumbled together in the bombed ruins of famous old palaces and cathedrals.

Andrew Cooper's immediate assignment is to try to find some good German newspapermen, who have given evidence of an acquaintance with ethics, who would publish the new periodicals under the American Occupation. His deeper quest for the meaning, the composition of courage, and his longing for some heroic, fearless, cleansing achievement, are pursued with increasing, reckless obsession. The whole book is the fine old theme of the hunt for the brave and the incorruptible.

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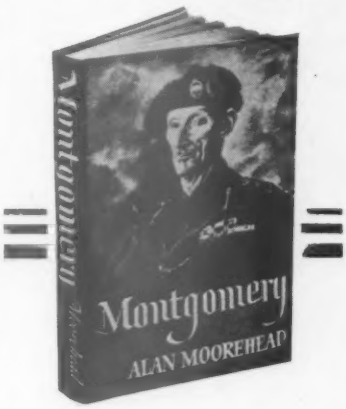
England's most brilliant correspondent writes the life story of England's most brilliant general



Montgomery

By ALAN MOOREHEAD
Author of "ECLIPSE"

DESPITE Mr. Ingersoll, Montgomery is one of the great generals of the English-speaking world—a leader whom history may rank as the peer of Cromwell, Wellington, Sherman and Lee. Here is the full story of his life: the steady, unsung years that preceded his fame — much as his prodigious artillery barrages opened the way for each dramatic break-through — his rendezvous with destiny in the desert, his sweep across North Africa, his amazing change-over from desert warfare to semi-amphibious operations, his desperate toehold at Caen, and his final triumphant drive into the shattered Reich.

Alan Moorehead was with Montgomery all the way from Egypt to the Elbe. His eye-witness reports of Monty's battles are unequaled. And his extraordinary perception of human motives, his superb gifts of analysis and interpretation make this study of England's most remarkable general as fascinating as it is authoritative.

"No better choice of a biographer could have been made . . . Alan Moorehead tells this story superbly well, with as marked an ability for biography as Montgomery had for winning battles."—
J. B. Priestley.

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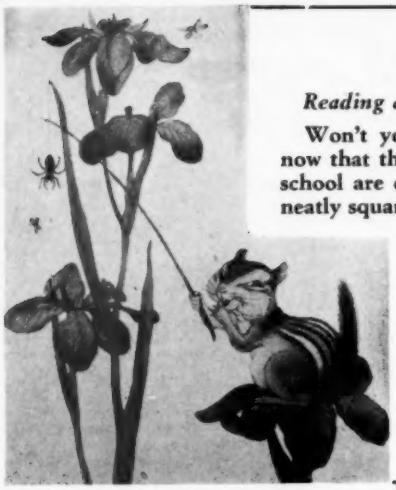

THREE R's = A+

Reading and 'Riting and 'Rithmatic . . . .

Won't you join the others on our honor roll now that the initial confusion of the first days of school are over? We've got the *reading* problem neatly squared away in our book columns. *Math* is a pleasant problem when it saves you money—as it will if you order from the *Journal* and grab your discount. That leaves *writing* in our book coupon as your one assignment. We promise not to shirk our homework —we'll mail your order promptly.

Happy days and lots of A's!

S. L. A.

CHOICE AND CHARMING

THREE LITTLE CHIPMUNKS. Written and illustrated by Marjorie Torrey. Grosset and Dunlap. (3-6) $1.00. (See cut above.)

Being the smallest chipmunk failed to keep Cheeky from teasing owls and frogs until he learned that guarding baby wrens, smaller than he, was more fun. Lively, colored pictures on each page reveal the charm of a writer whose *Artie and the Princess* (Howell, Soskin, $2.00) for the 5-9 is my top favorite.

A LION FOR PATSY. Written by Miriam E. Mason. Pictures by Vera Neville. McKay. (4-7) $1.50.

Flouting the rule "no pets permitted" by brazenly harboring a fuzzy gold *lion* will make a special heroine of Patsy to other apartment housed children who collect turtles and fish in baffled rebellion against an adult world. That her readers learn the mystery of a moth is immaterial to a clever tale garnished with gay drawings.

KATIE MEETS BUFFALO BILL. Written by Katherine Koch. Pictures by Grace Paull. Grosset and Dunlap. (5-9) 50c.

Quaint, cocky drawings highlight the marvelous meeting of quick-tempered Kate and Buffalo Bill at the Wild West Show. He teaches her in a nostalgic plot that "you can't keep your head if you lose it." Wise parents will store this, and the story below, on their "emergency shelf" to pull out for special rewards.

JENNY AND THE KING OF SMITHIA. Written by Walter Brooks. Pictures by Decie Merwin. Grosset and Dunlap. (5-9) 50c.

If your kids don't know what Ennyjay said to the Ingkay (see title!) which stopped his snooping at the neighbors with his spyglass, they'll catch on quickly to a favorite game. Remember? Lots of fun for little money.

WOLF STORY. Written by William McCleery. Pictures by Warren Chappell. Knopf. (5-9) $2.00.

One agreeable father, veteran of the "make up a story" game, has dashed one off straight from the heart. If you've been constantly interrupted by bright eyes who wants the hero to be a sailor when your story revolves around keeping him dry, or who quibbles over your brilliant plots, Waldo and Rainbow (wolf and hen) will hush their fuss. Buy this for reserve artillery when all else fails to keep peace. You'll laugh as hard as your listeners.

TEACHERS' PETS

RACING THE RED SAIL. Written by Alice G. Kelsey. Pictures by Dorothy Bayley Morse and Robert Bayley. Longmans, Green. (12-15). $2.00.

Modern Greece remains blurred and unreal to most school children despite newspaper prominence. Long overdue comes a vibrant, human account of the daily lives of her children. With remarkable restraint, their poverty and hunger stay muted, allowing the natural happy optimism of youngsters everywhere to shine through. Hunting the oldest clock with Boy Scout Mitsos, parading with Costa and his Easter candle, and selling lavender with gay Penelope brings us closer to this country's people today than most histories can do. Mrs. Kelsey did relief work in Athens, and all royalties go to the Near East Foundation for children of Greece.

THE GOLDEN DICTIONARY. By Ellen Wales Walpole. Pictures by Gertrude Elliott. Simon and Schuster. (5-10) $1.50.

"Look it up yourself, dear." What a heavenly phrase for harassed mothers after years of supplying all the answers! Aside from the selfish angle, first graders learn the proper use of a dictionary in sugar-coated style which also appeals to those older and younger. Gigantic in size, with 1,500 unusually fine color pictures, the 1,030 words are clearly indexed and defined. Companioned by twin sister (*The Golden Encyclopedia*, $2.50), their brains and beauty are irresistible.

CRIMSON FAIRY TALES. By Andrew Lang. Pictures by Ben Kutcher. Longmans, Green. (8-12) $2.50.

VIOLET FAIRY TALES. By Andrew Lang. Pictures by Dorothy L. Gregory. Longmans, Green. (8-12) $2.50.

Popular in schools and libraries, Andrew Lang's fairy books are ideal for quiet hours at home. Blossoming out like those before them (*Red, Blue, Green, Yellow*) in new clearer type and 8 color plates in each, they too contain folk lore from many countries. The *Violet* adds Slavic tales, while the *Crimson* dips into stories from Japan, Hungary, Finland, Russia, Rumania, Italy, etc. Good gift for the service child, whose geography awareness may be better developed than his more settled friends.

WRITING YOU'RE READING

By Lt. Col. Robert F. Cocklin, FA

Now that we are awakening from our summer doldrums, we are faced with the happy prospect of some excellent reading for the fall season. The reading public, for once, stands to gain considerably from the present high prices, shortages, et al, that are at present beleaguering our daily lives. For the book publishers find themselves in a somewhat different predicament from the manufacturers of the necessities of life. They cannot simply pass on to the consumer the rising costs of paper, publication, labor, etc. Consequently, there is every evidence that manuscripts are being more carefully screened and those that get into print are for the most part, superior to the deluge of tomes that immediately followed the war. Fortunately too, since the prices have been pretty well kept in check, book reading is one excellent form of recreation that can be indulged without excess cost. The fall lists present not only a general overall excellence in quality but a remarkably balanced variety as well.

When we think of autumn, we thing of falling leaves, nippy breezes and footballs zooming through the air. Those of you who take your football seriously will welcome Dana X. Bible's *Championship Football* ($3.00), scheduled to be published with the opening of Texas University's schedule. Bible ranks high on the list of the country's leading coaches and has for a number of years. He retired as head coach at Texas last year but remains on duty as their director of athletics.

To the Bitter End **($4.00) by Hans B. Gisevius is a brilliant informal history of the Third Reich by a man who became one of the leaders of the German underground, holding a government position all the while. With a reporter's flair for revealing detail, he traces, in this very moving personal history, the macabre pattern of scandal, blackmail, betrayal, intrigue and tragedy by which the Nazis took and held power. Highly recommended for all readers interested in modern history, and for anyone else who enjoys a powerful story.**

Here we have something for the ladies: *The Basic Cookbook* ($3.00) by Marjorie Heseltine and Ula M. Dow. This is reputed to be the simplest and yet most complete cookbook on the market. In addition to its nearly 700 pages of recipes and instructions, it contains a unique feature—96 pages of photographs, which comprise a how-to-do-it manual in pictures and captions. It shows how things should look when prepared properly and how they look when you've left them in the oven too long. *The Basic Cookbook* is an ideal gift for the new bride and for any woman who wants one complete cookbook.

Romance and violence dominate the 17th century Dutch East Indies scene which is the background for Norah Loft's just-finished new novel *Silver Nutmeg* ($3.00). Not only is it the story of the islands, of the feuds between the British and Dutch for mastery, and of natives who hated all whites, but a touching and sometimes bitter love story of Annabet who came from Holland to marry Evart Haan who ordered that she be killed, and of Christy, with whom Annabet falls in love.

Robert Capa, one of the ace war photographers during the last world war, presents a somewhat frivolous slice of his wartime adventures and photographs in his new book, *Slightly out of Focus* ($3.50). He combines hundreds of excellent photos with a flippant account of the war as it affected him personally. Many of his pictures are excellent but the accompanying commentary gives little weight to the old adage about "the pen being mightier than the sword." Much more readable would be a biography of the eccentric life that he led prior to the war. His wartime experiences were very similar to those shared by more articulate writers.

Richard L. Frey has just edited a new and complete *Hoyle* ($3.00) which is a veritable encyclopedia of some 300-odd games, their rules, and instructions on how to play them. Running the gamut from Accordion to Zioncheck, this is the most complete game book this reviewer has seen to date.

The growing amateur interest in home movies necessitates announcing the recently published *Pictorial Continuity* ($3.00) by Arthur Gaskill and David Englander. Essentially the book tells how to shoot a movie story. It breaks down the complicated technique of camera continuity and outlines the work in simple terms understandable by all. Over 80 illustrations point up the text.

Students of history will welcome the publication of *Frederick the Great* ($5.00) by Dr. G. P. Gooch. Already hailed as one of the outstanding living historians, Dr. Gooch should gain stature with this fine volume. His biographical study of the founder of modern Germany is a remarkably readable and informative study.

Argentina has been playing an ever-increasing role in world news these last few years and because of this, *Revolution Before Breakfast* ($4.00), the story of Argentina from 1941-1946, is particularly timely. Written by a husband and wife team, Ruth and Leonard Greenup, *Revolution Before Breakfast* is a first-hand account of Argentinian development as they witnessed it during their five-year stay there which terminated in 1945. In addition to the straight reporting of more famous events, there is a wealth of colorful background to acquaint the reader with the country as well as the people in it.

It is refreshing indeed to find a story of high adventure, where the wind blows only through the sails and never through the boudoir window. It is somewhat startling, too, to discover that the story is true! The object of these revelations was none other than *The Voyage of the Cap Pilar* ($4.75), written by Adrian Seligman. Bent on sailing to the far corners of the globe, Mr. Seligman and his wife Jané decided to sink their last 3,500 pounds into a ship that would take them on their carefree journey. They found their ship, *The Cap Pilar*, and were almost broke when they finished outfitting her. Their advertisements for a crew brought a group of willing but inexperienced hands ready to go along for the adventure. This account of their voyage leaves little doubt that all of them drank their fill, for this is truly a brimming cup of excitement and thrills that lulls the reader into daydreams of life on the high seas.

Jefferson: War and Peace, 1776-1784 ($6.00) is the second volume of a monumental work prepared by Marie Kimball. This magnificent biography covers a period of Jefferson's life that has heretofore received little attention. Centered principally around his career as governor of Virginia, this volume illustrates clearly the decline in popularity that ofttimes visits men in public life. Mrs. Kimball aptly describes Jefferson's tenure as governor as "a crescendo of misfortune," for it was during his term that Benedict Arnold successfully invaded Virginia to be followed by Cornwallis who literally ruined the state. Jefferson at the helm bore the brunt of the criticism for this unhappy state of affairs. The chronicle of this phase of Jefferson's public life is but a small portion of the book; the remainder is equally interesting and informative. Mrs. Kimball, who is Curator of the Thomas Jefferson Memorial Foundation, has twice been awarded a Guggenheim Fellowship for her work on this biography of Jefferson. Readers of her work will be grateful for the excellence of her efforts in preserving for posterity an intimate knowledge of the life of one of the greatest presidents and Americans.

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